

Thursday, March 25, 1982

Industry will fund new comms network

by Donald Kenneth

THE government is assured that private finance will be readily available to build the nation's proposed new wideband cable network.

The network, which was instigated by the government's Information Advisory Panel, would support advanced domestic computer services as well as many new television channels.

In its report, published this week, the panel states that cable systems offer large business opportunities with good chances of profit. And that during investigations firms showed considerable interest in participating.

More sources could be tapped than was the case in direct satellite broadcast systems, said the panel.

because the scale of investment for distinct parts of a cable system would be much smaller.

The panel has recommended that the target date for systems to be working should be in time for the direct broadcast satellite services at the beginning of 1986 and UK industry must be allowed as much preparation time as possible.

The cable scheme is envisaged as discrete broadband local area networks installed under franchise arrangements in urban areas and designed to a common set of standards. Interactive information services including education, security monitoring, local publishing and advertising are seen as important applications for the future, but initial financing will depend on revenue from additional entertainment services.

The panel has proposed that the government announce a broad policy by the middle of this year, with detailed administrative and regulatory proposals following early next year.



SINCLAIR... Raising money for capital investment.

Clive Sinclair cashes in 10% of his chips

by David Craver

CLIVE Sinclair, one of Britain's best-known microcomputer pioneers, is cashing in a share of his company to raise money for capital investment.

The merchant bank Rothschild will handle a private share placing some time this summer and is currently undertaking a valuation of Sinclair Research to determine a price.

Clive Sinclair, founder and owner of the company, says he will sell about 10 per cent, depending upon the valuation. Sinclair Research's year-end is at the end of this month, and profits will be over £6 million.

Sinclair says current business is very strong, but he does not want to divert funds from the computer business to provide the necessary capital investment in projects such as his electric car. The car, which will be launched in 1984, will need

substantial start-up money for production facilities.

Sinclair says he has made no decision concerning an eventual move to a full Stock Market quotation. The private placing of shares will probably take place in July.

Sinclair Research, which was set up just two and half years ago, has sales running an estimated £30 million a year. Its ZX81 is being produced at a rate of 60,000 a month, and a deal has recently been signed to sell the personal computer in the US through Times, the US watch and camera company.

ULCC had a long wait for supercomputer, having cleared it way last spring with the purchase of an Amos V8 IBM mainframe to serve as a front-end support processor.

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£1250.00

(VT100 extra)

ICL signs Logica WP

FORMAL agreement has been reached between ICL, the National Enterprise Board and Logica for ICL to market the Logica N2200 word processor. The deal fills an important gap in ICL's product range and could lead to a doubling of sales from last year's "over 1,000", according to Pat Coen, managing director of Logica VTS, which makes it.

The N2200 began as a product developed for sale by Nixos, the NEB-owned office automation company which has been wound up with big losses. It was at the heart of the proposed takeover of Nixos by Gestetner, which fell through after it became apparent that Logica VTS would not also be transferred to Gestetner as the

"Logica can't get a mass market as ICL can," he commented.

The N2200 is based on the Intel 8086 processor and is generally reckoned to be a worthy if unexciting product, having a good screen layout and straightforward operating procedure.

It will be sold by ICL as a stand-alone word processor and for networking.

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Thursday, April 1, 1982 Number 802 30p

Intel picks UK for 1,200-job European hq

by Robert Parry

ULCC 1000 jobs will be created as a result of plans by US microchip maker Intel to centre its European expansion on its UK site at Swindon.

As well as housing the company's Northern European headquarters, looking after the UK, Scandinavia and Benelux, the Swindon site will provide computer operations covering almost all of Europe.

The computer service on a newly installed IBM 4341, is in

tel's first computer centre in Europe. It will take over work previously done in the US and on bureaux services co-ordinated through Brussels. Component testing and quality assurance equipment has been moved in from Paris and, like the systems repair facility, will serve the whole of Europe.

Intel's UK staff has grown from 20 to 200 in the 18 months it has been in Swindon.

According to Intel chairman Gordon Moore, world sales have expanded significantly in the past three months, and Moore is sure this marks the end of the "peculiar recession" — peculiar for systems. When compared with the other contenders France and West Germany the costs of building and labour are much less, he says. Swindon was chosen within the UK because of its easy access to an international airport.

He feels technology is forcing the industry to make more complex products, leading to Intel's move towards systems products, selling at the level customers want: components, boards or boxes.

Plans to develop the Swindon site reflect the growing importance of systems products. Moore says that the "masterplan" for the site, which will eventually house up to 1,200 people, will include manu-

facturing, but this would be systems integration and software development, not wafer processing. So far the masterplan has no end date or timing, however.

Swindon is Intel's first wholly-owned site in Europe, one reason for moving operations involving large amounts of capital equipment there. "It's better to put these into our own facility, where we have control over the building and the floorplan", says European general manager Barry Cox.

Intel chose the UK for the first

— but not, according to Cox, the last — European building it owns because the UK represents a significant market, especially for systems. When compared with the other contenders France and West Germany the costs of building and labour are much less, he says. Swindon was chosen within the UK because of its easy access to an international airport.

Systems and component ware-

houses for all Europe are now located in Swindon, says Cox, adding that it would be inefficient to have a geographical separation between the warehousing and quality assurance or testing operations. As well as the equipment already brought in from Paris, there will be £300,000 of new spending on machines.

These are the major findings of a survey carried out by Computer Weekly, in conjunction with chartered surveyors Herring Son & Daw, into the problems computer firms encounter when seeking premises. The survey covered 100 companies in the so-called golden triangle bounded by Reading, Basingstoke and West London, prime location for computer firms.

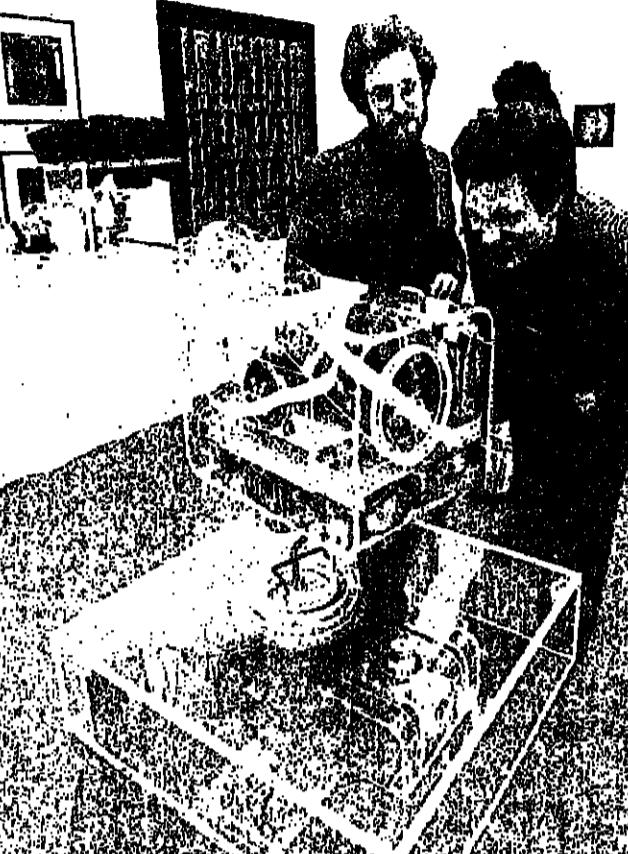
David Willcocks, partner at Herring Son & Daw, says the need for a survey became clear following property searches carried out for his clients.

"Time and time again we came

up against barriers in trying to find buildings suitable for high technology industries in the right location," says Willcocks.

The Perq scientific graphics computer is set for a reduction in price of more than 20% from today. An ICL spokesman denied reports that the cut had been forced on the company due to poor sales of the device, saying that the £19,950 price tag for a typical configuration reflected managing director Robb Wilmot's stated intention of bringing prices down "very low" by 1985.

One way round the restrictive planning regulations is to build a



Computers make art in the shape of a sculpture called "Facing out laying low" by Norman White at an exhibition of Canadian computer art held in London last week. The sculpture moves and makes sounds according to the light patterns around it — and therefore the people looking at it. Report, page 3.

Revival of the Luddites

by David Craver
THE explosive growth expected for the UK computer and information technology industries could be severely restrained as a result of a sudden surge of membership in a neo-Luddite society opposed to the introduction of new technology.

Formed only 18 months ago at a polytechnic on the South coast SOT, or Stop the Onslaught of Technology, claims it now has over two million members throughout England, Scotland and Wales.

Branches have recently been set up in both Northern Ireland and the Irish Republic, and the society's organisers hope to spread on to the Continent in the near future.

Bob Gayler a technician at Brighton Polytechnic who started the movement, says he receives his inspiration from the Luddites who in a short burst of fury from 1812 to 1818 set about destroying machines in the North of England.

As well as being distressed by the job losses he sees going hand in hand with the introduction of new technology, Gayler expresses concern with how machines have usurped the decision-making process of many individuals. He cites the massive computerisation of local bus routes which does nothing to stop the problem of bus bunching, and also the number of "red alerts" in the US defence system.

Information Technology Minister Kenneth Baker was astounded at the rapidity with which SOT has grown, and said that Ministers were giving extremely high priority to setting up a special task force to formulate an official government response.

Red tape ties up computer firms

by Andrew Thomas

RESTRICTIVE planning regulations and a lack of adequate property are hampering the development of the British computer industry. UK computer companies are being restricted, and foreign companies looking to invest in manufacturing plant in the UK may go elsewhere.

Examples include DEC, with its headquarters at Reading, and Intel which last week announced it is to expand its UK base into a European headquarters at Swindon (see story this page).

● Lack of sites — page 17



Brakes taken off CAFS

by Andrew Thomas

ICL is about to initiate a major marketing push for its content addressable filestore system, CAFS. Although recognised as a concept with immense potential, sales have been disappointing to date with less than 20 systems installed.

Drawbacks of CAFS have included the restriction of its use to the old 1900 series operating systems, running under the DME emulation microprogram, and the mandatory attachment of the ageing 60 Mbyte ED560 disc drives.

ICL is also expected to make CAFS available to users running under its 2900 native mode operating system, VME 2900.

Derek Ward, systems manager at Thorn EMI and a member of the CAFS user group, cites the restriction to 1900 range operating systems as his main complaint.

On top of this he adds: "I'd like to

see the removal of the special disc

format needed at the moment — it

can be a bit inconvenient."

Other enhancements expected include a local area network CAFS system, based on the ME29 small mainframe. The LAN system is aimed at the inter-office systems market, and should greatly increase the sales potential of CAFS.

An economy version of CAFS, driven by the Intel 8086 microprocessor, should also put in an appearance.

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Philips, CDC to have video disc system by 1984

by Kevan Pearson

PHILIPS, the Dutch electronics group, and Control Data are getting together to exploit the video disc for computer applications. The two companies have formed a joint venture to develop a system and expect to have a marketable product within two years.

The deal involves setting up two research centres – one in Holland to develop the actual disc, and one in Colorado Springs, to develop the write/read system.

The result could be a product capable of storing one gigabyte costing less than \$10,000. This compares with prices about 3½ times greater for current state-of-the-art magnetic disc technology.

Despite the obvious price advantage, the product is not expected to compete in the main DP market because of one drawback – the disc cannot be erased and the disc reused. However, the two companies see a major place for the disc in the office, replacing conventional filing and archive systems.

The disc is rugged and can be handled without damage, and there is no danger of heads crashing since the read and write heads are lasers, positioned well above the disc.

Services profits drop

PROFITABILITY appears to be on the slide for computer services companies in the UK. An analysis* of the financial performance of 60 leading companies by ICC Business Ratios, shows that average profitability rose from 11.6% in 1977/8 to 11.8% in 1978/9, but fell back to 9.7% in 1979/80.

*Computer Services, published by ICC Business Ratios, 23 City Road, London EC1. Price: £11.

The report, covering the three



WORDEN... "The SDP of database systems".

Contract tax threat postponed

by David Craver

CONTRACT programmers have been given at least a temporary reprieve from taxation of 30% of their income at source.

Inland Revenue proposals which would require agencies to hold back a portion of the revenues of contract programmers and other workers have not been included in the 1982 Finance Bill, as expected.

The Inland Revenue plan, which first surfaced in last year's Finance Bill as Clause 34, was designed to catch what it believes are the large number of tax cheats among agency workers.

But industry feared that the scheme would hurt the formation of new business, as well as curtail what it sees as the essential flexibility of the workforce.

The Inland Revenue schemes have been opposed by a 12-member group led by Stan Mendham of the Forum for Private Business. The group published its own plan for taxation of agency workers in January, and the absence of any mention of taxation of agency workers in this year's Finance Bill makes Mendham hope Inland Revenue will revise its approach.

Latest Pearl is for the end user

by Claire Gooding

THE Pearl program generator, one of the first code-writing tools for microcomputers, has been transformed into an end user tool and relaunched in the UK. The new version is called Personal Pearl.

Pearl in versions I, II and III caused a lot of excitement when it surfaced in the US some years ago, but never caught on in the UK. Earlier versions were aimed at experienced programmers or at least

skilled micro users, but author Bill Stow has now produced a version which enables someone without any computer experience to sit at the keyboard and produce a working system in a matter of hours.

"We realised three years ago that we were not working for the end user," said Stow, launching the UK sales operation Pearl International, last week. "Everyone has a unique way of doing what is essentially the same job, and we have to resort to a manual."

The only written record needed is some memory-jogger of names and fields already used so that they can be used again to link files when designing reports. Word processing is a built-in facility.

At present the system works on any CP/M machine, and according to Pearl International director Tony Frowd, an Apple III version will be released in May; 16-bit versions should be available "without too much effort". The product has already been adopted for the Osborne micro and is being sold with it as a self-tutoring accounting package.

Pearl International realises that it will have some difficulty persuading a sceptical market which has heard it all before that it really can deliver a database-computer generator and interactive information system for under £200.

Personal Pearl has already had false start in the UK when Terde launched, then dropped, the product because of delays in its development.



STOW... Concentrating on "human engineering".

Logica's Rapport for 16-bit market

by Maggie McLenning

A 16-bit microcomputer version of ICP-award-winning database management system Rapport, is planned by its developer Logica. Although a subset version has been announced for 8-bit micros running under CP/M, the 16-bit release is expected to contain all the original mini and mainframe features, including the Interactive Query Language (SQL) interrogation facility.

"We think that it will suit applications software developers," commented Robert Worden, Logica's product planning manager. "We are doing a Unix implementation and a Xenix system is being installed at the moment."

Logica's Rapport will run on any CP/M-based machine with 64K RAM and Microsoft's Fortran 80. It has already been installed on Equinox, SuperBrain, Casu Super C, Zilog MC2, Cromemco and TRS 81 machines. The first licence costs £900, with additional charges of £450 for subsequent ones.

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UK escapes most of Texas' 2,700 job cuts

by Robert Parry

LEADING US semiconductor manufacturer Texas Instruments has laid off 3% of its worldwide workforce, about 2,700 people. But according to Texas' UK personnel director Martin Wibberley, there will be very little impact in the UK.

About a dozen redundancies will be caused by reorganisation of sales and marketing departments in Bedford and Plymouth which will also result in transfer of jobs between the two sites.

"The fortunate thing from the UK point of view is the wide range of Texas' activities here. This breadth gives strength," says Wibberley. "Texas' UK business spreads from semiconductors, through distributed computing, to geophysical surveying."

The bulk of the 2,700 lay-offs hit US plants — 1,700 jobs have gone at Dallas, Houston and Sher-

man in Texas — primarily in the semiconductor and distributed computing business. Short-term measures like extra holidays and short working weeks and previous lay-offs have not proved adequate to overcome weak demand and excess capacity.

Texas Instruments recently reported a 49% decline in income for 1981, falling to \$108.3 million on sales of \$4,200 million. The 1980 figures were \$212.2 million income from sales of \$4,090 million. It has 50 plants worldwide, 16 in the US, the remainder in Europe, Latin America and Asia.

National Semiconductor, which has just announced its first quarterly loss, is trying to cut costs but avoid lay-offs. The latest move is a six-month pay freeze for all 35,000 employees and the suspension of managers' bonuses. The company views laying off workers as "a last resort".

University sells text compactor

by Philip Hunter

A PROGRAM which will compress files of English text into less than half their original size at copying speed has been put on the market by Keele University.

It is being marketed in the UK by Keele Codes Ltd (KCL), a company set up in co-operation with the University, and will be launched in the US in May.

It is aimed especially at the small business user, but anyone generating large amounts of text will find it useful, says Dr Dennis Andrews, managing director of KCL, whose brainchild the program is.

The program consists of an encoding part, which KCL claims will compress any ASCII file of English text into at most half its original size, and a decode part to restore the compressed data to its original form. It occupies 9K and so could reside in the space saved by compression on most discs according to Andrews.

The time saved by having less data to copy to disc is slightly greater than the time taken to perform the compaction on both micro and mainframe computers, he says. Decodes are faster still, Andrews adds.

The program uses an algorithm based on the fact that certain combinations of letters are more likely to occur than others at each point of an English word. The most likely combinations can therefore be compressed into far fewer bits of storage than are normally needed.

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The boys of Perryfields High School talking with Kenneth Baker about their control project.

Micro prizes for ten schools

by Philip Hunter

IN what he described as "the most modern thing ever to happen at Admiralty House", Information Technology Minister Kenneth Baker last week awarded microcomputer systems to ten schools as prizes in the Department of Industry's second Schools Computer Competition.

Consolation prizes of microcomputers without the frills were awarded to 90 other schools.

One of the star prize-winning projects, from Perryfields High School in the West Midlands, set out to demonstrate how a computer can be used to control mechanisms.

The ten joint winners came from

two categories: Five star prizes for ordinary schools, and five prizes for special schools of physically or mentally handicapped children.

The star prizes were awarded to schools in Carlisle, Braintree, Norwich, West Midlands and Port Glasgow. They comprised a Research Machine 380Z, available under the DoI's Micro in Schools scheme, a high resolution graphics board and associated software.

The special schools were given systems tailored specially for their needs. Winners in this category came from Biggleswade, Cambridge, Cirencester, Coventry and Belfast.

CAP uses Ada to control robot arm

by Claire Gooding

ONE of the first applications written in the new real time defence language Ada is up and running in Reading, where it is controlling a robot arm in various simple tasks.

CAP Reading, which took delivery of the Ada compiler and workstation from Telesoft in the US at the end of last year, has been learning its way around the compiler, and training programmers in coding Ada. Because CAP is also involved in robotics, it hit upon the idea of using Ada to control a robot as a lively way of demonstrating the new compiler.

"People have to read a large number of specialised magazines to keep up with what's going on," said Denton. "What I want is a highly unspecialised storehouse of information, succinct presentations, kept up to date, with the possibility of actually ordering goods at the end."

At the launch on April 5 the magazine will have 1,000 pages and it is expected to grow to 10,000 by the end of the year. The editorial content will consist of news, commentaries, product reviews and buyers' guides. Routes will be provided from the editorial to the relevant advertisers' pages, which will include ordering facilities. Denton also wants to line up cross-routing agreements with other information providers.

Broadband networks use modulated radio frequency carriers to provide several channels for digital and analogue transmission on the same cable, instead of putting a single digital data stream straight through.

Opportunity window shut

by Donald Kennett

THE opportunity window for broadband local area networks, to the cable as baseband networks do.

Strategic Inc recently predicted that the Ethernet baseband networking system would be the ruin of its originator, the Xerox Corp, because it was so heavily committed to it for its office products strategy.

Strategic's £695 report on Baseband Versus Broadband, which is distributed by the UK subsidiary of International Planning Information, says that broadband networks are more flexible and just as cheap.

Warning on EEC withdrawal

by Donald Kennett

WELSH Secretary Nicholas Edwards has drawn Parliament's attention to the results of a recent American survey which showed that 60% of electronics firms interviewed would find the UK no longer suitable as a base for European operations should the UK withdraw from the EEC.

Mitel, for example, which provided an enormous number of job opportunities would not have established itself in Gwent if it had not been for our membership of the EEC, he claimed.

TRIVECTOR

BRITISH-MADE MICROCOMPUTERS AT THEIR BEST



SALES BRIEF

Cambridge to install IBM top machine

CAMBRIDGE University Computing Service is replacing its 16-year-old IBM 370/165 with IBM's top machine, the 3081 D16. The present operating system, a version of MVT enhanced by Cambridge, will run on the new machine under VM.

It is expected to start taking on the service's 4,000 users from September. Meanwhile, the Cambridge team is working on an equivalent enhancement to the 3081's MVS operating system.

BT spends £37m

RECENT beneficiaries of British Telecom's massive ordering programme include Mitel, Ferranti and ITT. Mitel is to supply a second batch of PABXs, worth £16.5 million, with between 16 and 120 lines by November 1983. Ferranti is to supply 800 VDUs and 120 Ferranti PTT controllers costing £1 million for two regional office networks; and ITT is to supply over £18.5 million worth of screen-based telex terminals.

The cost is 26 cents for a one-

US direct electronic mail service falls short of 20m message target

by Howard Karten

THE US Postal Service's direct electronic mail system, ECOM, may be in trouble. Begun in early January, with projections of up to 20 million electronic messages a year, the system has lately been carrying only some 6,500 messages a week.

Postal Service officials in Washington attribute the low volume to two problems: Uncertainty among would-be mailers over a pending law suit by the Department of Justice, which aims to stop ECOM; and a backlog in the certification of customers wishing to use the system.

ECOM is a hybrid electronic mail service. Commercial firms which wish to use the system must have their computer and telecommunications links certified by the Postal Service. They can then transmit their electronic messages to any of 25 ECOM Post Offices in major US cities, provided they transmit at least 200 messages at one time. The Post Office prints the messages and inserts the hard copy into the regular postal service for local delivery.

A Postal Service spokesman claims that the service has no preset projections for volume at this point. Even if volume fell significantly below 20 million in the first year, it is extremely unlikely that the service would be cancelled, say officials.

The cost is 26 cents for a one-



MANNING... "No extra expense for Honeywell users."

'IBM will have to adopt the ISO model'

by Boris Sedacca

DESPITE IBM's decision to go it alone in its communications networking strategy in the mid-1970s, it will gradually be forced to move over to the International Standards Organisation's model.

This is the view of Steve Warner, senior product consultant at Honeywell, who contends that IBM's own customers and the European government organisations, including PTTs, will not want a telecommunications environment dictated by IBM.

"IBM could have forced its Systems Network Architecture through as a de facto standard, but SNA is very dependent on a central host computer which places restrictions in defining the domain administered by the host."

"ISO has learnt from SNA and has made its system entirely open-ended. IBM now participates in ISO committees," he said.

Warner claims that IBM has already given an indication of this shift in direction by marketing in

Europe some black boxes which sit in front of an SNA system and which handle the ISO X25 protocols instead of IBM's own synchronous Data Link Control.

Warner also reiterated Honeywell's commitment to the ISO model. The company's seven-layer Distributed Systems Architecture includes the bottom three protocol layers from ISO's eventual seven-layer model. The other four layers still have to be finalised by the ISO committee, so Honeywell has implemented the anticipated ISO draft standards for the top four DSA layers.

Keith Manning, director of large systems marketing operations at Honeywell, added that users on DSA would not be committed to additional expenditure if the finalised ISO standard differed from DSA, and DSA had to be changed.

Last year, Honeywell announced SNA protocol handling on its DPS6 small business system based on the Level 6 mini.

Every busy director deserves a personal assistant.

Project management system for UK soon

by David Craver

WANG has sold a £100,000 microprocessing system to Leeds Peninsular Building Society, comprising an Office Information System in configuration with 13 terminals and 14 printers.

Expansion aid

CAMBRIDGE Interactive Systems has supplied a £200,000 computer system to the Ministry of Defence. The system will be based on the 486-M database management system from Adabas Software, running on a pair of Digital Equipment PDP-11/44 minis.

As yet, CAP has not sold any of the £15,000 Ada workstations, but it reports a high level of interest.

The seminars it runs to familiarise people with the Ada compiler are oversubscribed. Most interested are the other members of the two Ada consortia, Augusta and SSS, which are involved in defence and industrial programming.

"I didn't find Ada easy to learn. It is very much larger than Pascal, and there are a great number of structures to learn before you can actually produce anything," she said.

The listings of the programs she has written to control the movements of the Armadillo robot arm

show a highly structured language, well laid out and documented within the source code so that even without knowing Ada it is possible to follow what is going on.

Weeks estimates that thorough training in Ada will take a year to six months. "I doubt if much will happen on the applications front until 1984 to 1985," he commented.

At the launch on April 5 the magazine will have 1,000 pages and it is expected to grow to 10,000 by the end of the year. The editorial content will consist of news, commentaries, product reviews and buyers' guides. Routes will be provided from the editorial to the relevant advertisers' pages, which will include ordering facilities. Denton also wants to line up cross-routing agreements with other information providers.

Broadband networks use modulated radio frequency carriers to provide several channels for digital and analogue transmission on the same cable, instead of putting a single digital data stream straight through.

The time saved by having less data to copy to disc is slightly greater than the time taken to perform the compaction on both micro and mainframe computers, he says. Decodes are faster still, Andrews adds.

The program uses an algorithm based on the fact that certain combinations of letters are more likely to occur than others at each point of an English word. The most likely combinations can therefore be compressed into far fewer bits of storage than are normally needed.

BABEL BOXES FROM PINK
BURROUGHS
PROTOCOL CONVERTOR
E595
PHONE 0371 830398
OEM ENQUIRIES WELCOME



PRYOR... "large market for standalone systems."

Project management system for UK soon

by David Craver

A SUCCESSFUL US project management system will soon be available in the UK and the European continent through Sydney Development, the Canadian-owned software house.

Sydney Development has been selling its own Connect II project management systems to large UK IBM users for the last year, but now has an exclusive arrangement with T&B Computing of Michigan for its standalone Prime-based system, called Track 50.

T&B has a "joint marketing relationship" with Prime in the US, and Sydney Development is hoping for a similar arrangement with Prime in the UK. Construction, as well as communications networks, research establishments, shipbuilding and other manufacturing industries are the main targets for the system.

Ray Pryor, Sydney's UK managing director, says Track 50 complements Connect II, and will allow the company to attack what he sees as the large market for

standalone systems. Track 50 is primarily for scheduling contracts, with a typical four-user system costing about £80,000. Pryor says it can go on the project site, where it can also be used for general accounting routines.

The system is particularly useful for highlighting critical activities in a project by means of constantly updated network analysis chart. It could, for example, highlight all phases of a contract involving a particular craft, showing those which were behind schedule and likely to put the whole project over its time limit.

The agreement is initially for three years, but T&B vice-president Cecil Murray says it has no intention of setting up its own operation in Europe. T&B has sold 35 systems in the US in the last 18 months and four in Europe.

The system runs on a Prime 250 up to an 850. A four-user entry-level system on a Prime 250-MOD II includes 96 Mbytes of disc, a 350 line per minute printer/plotter, and software.

We don't think a person in your position should have to worry about these problems.

So we've come up with the answer.

The Bitsy Secretary.

This is a specially developed word processor which can speed up all routine 'chores' quite

"But I've already got one... my secretary," you may be saying.

True, but does she have the time to give you all the help you need?

Many secretaries are so bogged down with day-to-day correspondence, reports, minutes and so on they just don't have the time to be personal assistants as well.

We don't think a person in your position should have to worry about these problems.

So we've come up with the answer.

The Bitsy Secretary.

This is a specially developed word processor which can speed up all routine 'chores' quite

a helping hand.

PLEASE SEND ME FURTHER DETAILS ON THE BITSY SECRETARY.

NAME _____

POSITION _____

Honeywell claims a lead in looking after the customer

by David Craver

RECOGNISING that maintenance of computer systems is inflation rather than technology driven, Honeywell has spent the last three years revamping its service structure to keep down the cost of customer service.

At the heart of its reorganisation is a central service centre in Hounslow - a facility purchased, rather than leased as is Honeywell's custom in the UK. That centre combines a hardware software response and diagnostic operation with a special network control function which enables Honeywell to simulate any of its customers' communications networks.

By centralising and computerising these three services, Honeywell believes it has stolen a march on its competitors.

But Kevin Kennedy, head of Honeywell's customer services division, says that all the leading computer manufacturers are going in a similar direction, and there are lessons to be learnt from each.

In the past access to a computer manufacturer's expertise depended on where the user was located. Now, Honeywell, like others, uses its own computers to centralise the activity, and this allows customers to tap the resources of the top hardware and software people in the country.

Kennedy says they are not yet able to fix anything centrally, al-

though the majority of software problems can now be solved by telephone, and a software patch can be transmitted down the lines. That, says Kennedy, "is the area of most satisfaction to customers and ourselves."

Preventive maintenance is being designed out of most products, and remote and customer diagnostics are the trend. But the better the product, the less challenge there is for a computer company's own technical people. That means the loss of some of the satisfaction of investigating and solving problems.

Kennedy says Honeywell is often in a position where it can define a problem before a service engineer goes to a customer site, which could be seen as de-skilling the job. But Kennedy disagrees.

While he says it does give rise to social or behavioural problems, the change in the service engineer's relationship to the customer has broadened the job. The engineer now "looks after the customer, not just the box", which calls for the development of more communication skills.

The second link in the chain is the technical assistance centre, which was created at the same time. The initial call automatically goes to the technical centre, before an engineer is despatched, where the company's hardware and software specialists are located.

And, most important, with hardware costs dropping, and inflation-driven maintenance costs as a result appearing that much bigger, the central service centre "enables us to hold down some of the factors that drive our prices".

The first line of support at Honeywell is the computer re-



KENNEDY . . . "Engineer now looks after the customer, not just the box".

pose centre in Hounslow, where requests for service are logged by an operator in front of a display terminal. That call triggers all actions, and works on a simple call escalation scheme.

The third link in the chain is the technical assistance centre, which was created at the same time. The initial call automatically goes to the technical centre, before an engineer is despatched, where the company's hardware and software specialists are located.

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The first line of support at Honeywell is the computer re-

Anti-trust case may re-open

by Kevan Pearson

WITH a decision on the EEC case against IBM expected within the next few weeks, there are now moves to re-open the US anti-trust battle between the company and the Justice Department.

Judge David Edelstein, who has presided over the case since its inception, has ordered both IBM and the Justice Department to appear on April 8 to explain why the decision to drop the case should be upheld. The move is at the request of Philip Stern, a wealthy US legal author.

Both firms are known to consider that the time has come for joint action to repel the Japanese and American invasions of this sector in Europe.

Pierre-Léonard Mestre, components chief at Thomson-CSF, said: "It is now more urgent than ever before for Europe to combine its forces. These are dangerously dispersed at present."

"We are trying to establish partnerships which are not easy to achieve. But I hope that over the coming months they will help to strengthen Europe's position."

Thomson-CSF produces one-third of France's computer components and keeps 14,600 of its personnel busy in this activity, producing a turnover of 3.4 billion francs (£340 million) last year.

Mestre said Thomson-CSF was entitled to a leading role in the new French government microelectronics programme, because other French manufacturers were involved in joint ventures with Philips, National Semiconductor, Harris and Intel.

The Commission is being careful about the facts of the case, since a guilty decision is almost bound to result in an appeal to the European Court of Justice.

If the decision goes against IBM there will have to be a further hearing to discuss what remedies the Commission will apply.

Thomson, Siemens in link talks

by Jack Gee

THOMSON-CSF and Siemens have begun negotiations in an attempt to pool their efforts in the manufacture of components for computers, French industrial sources reported in Paris.

Observers said that Thomson, as Europe's third ranking manufacturer in this field after Philips and Siemens, was strongly placed to establish viable manufacturing arrangements with the Munich-based company.

The secret to the high handprint read speeds is to capture unrecognisable characters on video and store them on disc for replay and correction after the main batch job. Most systems, says marketing director Chris Bryce, have to stop the scanner and key in the correction from a terminal, which he calls "hopeless".

The new 2280/1 scanner replaces the existing 2250, and can double its reading speeds. A single line document with a combination of OCR-B and E13B fonts can be processed at 10,000 to 12,000 an hour on the 2250, and at 25,000 to 29,000 an hour on the 2280/1.

Prices start at £150,000. The scanner can be expanded to connect with key-to-disc equipment to provide a mixed media system.

The third link, the network control centre, is the latest innovation, and stems from the fact that communications expertise is still not widely available and is difficult to train.

Honeywell put a team together with all the proprietary equipment from different manufacturers that its customers had installed so it can determine where in a network breakdowns occur. While it started off as something for Honeywell itself - how to correct a customer's problem - Kennedy found that 40% of the calls were coming from customers who wanted advice on how to set up a network. That led Honeywell to develop a program to compute the most cost-effective network.

Thomson is planning to expand sales of computer components to Japan after getting off to a slow start there.

OCR system can read 750 documents a minute

by David Craver

CAPACITY to handle both alpha and numeric handprint at speeds of up to 750 documents a minute is one of the most significant features of a new optical character recognition system from OCR ScanData.

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Thomson is planning to expand sales of computer components to Japan after getting off to a slow start there.



BRYCE . . . "Hopeless" to stop the OCR scanner and key in corrections.

UK electronic mail to link with US, Canada

by Donald Kennett

LINKS to the US and Canada will be added next month to the UK's national electronic mail service launched last week by British Telecom.

The service, developed by US company Dialcom, will be run by Telecom Gold (formerly BT Gold), a contracting company set up for the purpose with BT's backing but owned by City businessmen. It works by providing personal mailboxes on a central computer through which users can exchange messages and hold files.

Users call the central system via the public telephone network or through BT's SwitchStream 1 packet switched network. Links to North America will be established next month when SwitchStream 1 is connected to the international packet switched service IPSS. Messages will then be transferred between Dialcom centres in the three countries.

Charges are 10.5 pence per minute for connect time (top of the telephone call) and 20p a month per two Kbytes of storage. There are discounts for off-peak and bulk usage.

Interworking with the telex network is due to be added soon. By the summer, a database management package should be available to reduce the flow of paper.

For mobile staff the service means that their filing cabinets are as close as the nearest telephone and terminal.

and links will be implemented to BT's radio paging service to announce the arrival of express messages in users' mailboxes.

Links will also be set up to the renamed Telemessage overnight telegram service and to a number of remote multiplexers which will extend the area in which access is by local telephone call.

In autumn a link will be established to Prestel's Gateway, so that messages can be sent and retrieved using viewdata terminals. Next winter it will be possible to interact with the telex "super-telex" network.

Morris believes Dialcom will appeal to companies looking to boost office productivity. While salaries have risen dramatically, office productivity in offices has risen only 3% to 4% and investment per worker is way below shopfloor levels. Managers typically spend 70% of their time communicating and Dialcom offers an opportunity to reduce the flow of paper.

For mobile staff the service means that their filing cabinets are as close as the nearest telephone and terminal.

Another Unix machine to arrive in UK soon

by Robert Parry

CONTINUING the move towards 16-bit business computers built around the Motorola 68000 microprocessor and the Unix operating system, Bristol distributor Wilkes Computer is to offer multi-user versions of a new US machine.

Wilkes, though not an appointed sole distributor, is the only company shipping Wicat systems into the UK and since November has delivered seven single-user machines. True to its own strengths and the original direction of Utah-based Wicat - the World Institute of Computer Aided Teaching - these have gone to research and educational establishments.

Software released in May will add CP/M Emulator and a Unix look-alike to Wicat's proprietary MCS operating system. Languages to be added to the Fortran already offered include Pascal, Assembler and C for May. By June, a "real" Unix implementation will be available with Western Electric's Unix version 7.

The two multi-user systems, supporting three or six users, will be available from May, when Wilkes is converting software from DEC systems it sells.

Managing director John Peters says the link will enable his company, Williams Lea, to co-operate closely on international deals with the minimum of delay and much better security.

The company has worked with the US-based printer Chas P. Young for eight years and courier services have been used to carry the bromide plates between them up to three times a month, compared with the six or seven dozen jobs a day it does.

Williams Lea was the first printer of the Radio Times in the 1920s and it later specialised in corporate financial documents such as loan agreements, bond issues and prospectuses.

Recent floatations with which it was involved include Menes and Amersham International.

Despite the current low frequency of contact, Peters says the new link will make it worthwhile to extend the network further afield, where security and delay problems are also a major obstacle. The first extensions will be to Chas P. Young's sister companies in the Tico printing group in five other US cities.

Other co-operative arrangements will then be negotiated with companies in Hong Kong, Australia, Canada and Japan.

The typesetting machine is controlled by a 96-Kbyte Dual Processor, a Nova mini and document are buffered by an Interface Superbrain microcomputer with a 1.3 Mbyte floppy disc store; before a 4.800 bit-second modem over a dialled connection.

The new product, the Innovation, is based on DEC LSI-11/23 32-bit systems.

It comes with a one Mbyte central processor, a graphics workstation, and 84 million bytes of disc storage.

The software for the system was developed by BOC subsidiary Software Sciences.

ACTIVITY at the low-end of the computer aided design and manufacture market continues. The latest release from Intergraph, one of the top four suppliers of turnkey systems, will move the sale of its systems "from a monthly to a weekly basis".

In the two years that the US company has been operating in the UK it has sold some 30 systems worth a total of £10 million - or an average of over £300,000 a system. But the shift is being made to lower cost systems to take advantage of the growth area in CAD/CAM - equipment with two to four workstations.

At the end of last year, Intergraph released a four workstation model priced at £125,000. It now has a two workstation model starting at £78,000 which managing director Trevor Postlethwaite says has the same design potential as a large Digital Equipment VAX system.

The new system is geared towards three markets - architects, mechanical design, and electrical design - and, says Postlethwaite, will enable users "to get away from computer oriented systems to application oriented systems".

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It comes with a one Mbyte

MICRO NEWS

CAD package 'reduces VLSI circuit design and production time tenfold'

A TEN-FOLD saving in design and production cycles of VLSI circuit design is promised by Calma, the Santa Clara-based computer aided design company. The new Sticks CAD software package, shown running for the first time last week, uses symbolic layout — which makes up circuit designs through a hierarchy of building blocks — and automates device spacing and design rule checking.

According to Sue Schedler, product manager for Sticks, it is "real join-up-the-dots stuff that anyone can do", with the complex aspects of spacing circuits and checking for violations of the fabrication process design rules hidden from the user.

The designer sets up a library of primitive symbols to represent more complex geometries and builds up circuit modules from them. The appropriate spacing

and checking of these symbolic layouts is handled by the spacer program, which runs in the background while other symbolic layouts or other tasks are going on.

"Forty-five per cent of designers' time is spent counting grids on mylar or screens," says Schedler of conventional design systems. "Sticks eliminates that."

Further productivity increases come from the "attaching" feature, which automatically connects wires when they touch or come close to wires of similar materials in real time.

Design rule checking is not done interactively and Schedler feels that real time design rule checking is more trouble than it is worth.

Designers want to get on with laying out the symbols, making adjustments for violations later, rather than having to sort them out before continuing with the basic

layout, she says.

Schedler was a chip designer for

seven years before joining Calma,

having worked for Mostek and

Texas Instruments, where she de-

signed the first Speak-and-Spell

chips.

Automated chip layouts tend to be less dense than those done by hand, but Calma claims to contain the loss of density to within 10%.

Schedler says that using Sticks she

has been able to produce layouts

only 2% bigger than similar cir-

uits she has laid out by hand.

The Sticks software joins two

other systems for CAD of micro-

electronics: Chips, an interactive

graphics system for VLSI design

and Cards, for designing and

producing printed circuit boards.

They run on existing Calma

GDS II hardware, and the spacer

in Sticks will be supported on

VAX machines.



SCHEDLER ... "Join-up-the-dots stuff that anyone can do."

CMOS deal

A FIVE-YEAR technology exchange deal between Intel, Intersil and General Electric has been agreed covering CMOS microprocessors and custom products.

Intel will provide process and design information on its high density CMOS technology, CMOS, to allow Intersil to manufacture its 80C51 single-chip microcomputer and custom products from General Electric.

New market

BRITISH microcomputer manufacturer Ralp has moved into the plug compatible market for microcomputer systems with an add-on hard disc drive for the Xerox 820 personal computer.

The 505 offers five Mbytes of Winchester disc, giving an increase in storage capacity of 20 times and a speed increase to 10 times that of the standard Xerox floppy drive.

Alpha dealer

FIRST Scottish dealer for the Alpha Micro range of 16-bit business microcomputers has been appointed. Systemshare, computer systems and services unit within Northern Engineering Industries, Xerox 820 personal computer.

The 505 offers five Mbytes of Winchester disc, giving an increase in storage capacity of 20 times and a speed increase to 10 times that of the standard Xerox floppy drive.

Japan set to spend \$1,000 million on production of semis this year

JAPAN'S investment in plant and equipment for semiconductor production hit \$1,000 million in 1981, a fifth of annual sales value for the top 20 manufacturers. And, according to a report from Mackintosh*, these companies are ready to spend the same again this year.

The money is going into setting up production lines for VLSI devices such as the 64K and 256K dynamic RAMs being sampled or already coming into full-scale production.

The report estimates, for example, that a line producing one million 64K memory chips a month would cost about \$37m. The largest proportion of revenue spent on production capacity — not including any R&D expenditure — was Oki's 62%, valued at \$63 million. Oki is the 11th largest manufacturer, the report notes, a long way behind market leaders NEC, Toshiba and Hitachi.

It is not only the Japanese who are investing in semiconductor production capability in Japan. US companies Intel and Motorola are expected to join Texas Instruments, so far the only foreign manufacturer in Japan, and its full production from 1983, the report says.

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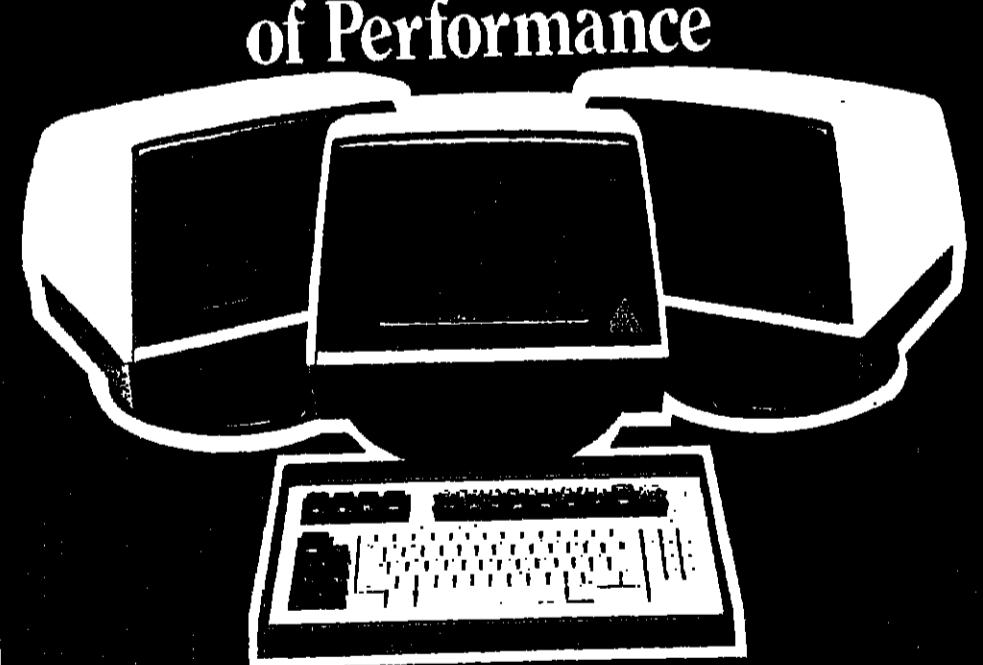
2023

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Setting New Standards of Performance



For more than thirteen years DELTA DATA SYSTEMS has been designing, manufacturing and marketing video display terminals. In all that time we have been talking and carefully listening to terminal system designers and users to define the feature profile of the ideal display terminal.

We have now combined all of that knowledge and experience to produce the DELTA 2200 Series, the latest addition to our comprehensive range of high quality ASCII terminals. It has been developed in the United Kingdom with the needs of the European computer user in mind and it provides all the operating and system features most requested by the discerning user.

There are three models in the series which is designed to cover a wide spectrum of applications and disciplines. Here are some:

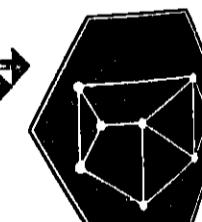
- * Message Switching Systems
- * Time Sharing Bureaux
- * Telex Compatible Systems
- * Forum Mode Data Entry
- * Data Entry/Information Retrieval
- * Text Preparation Systems
- * Protocol Communications
- and there are many more

For the user with small systems or high speed terminal requirements there is System 2000 which combines a 'super smart' DELTA 2200 display terminal, a powerful micro computer with integral micro discs and a versatile printer. To this well matched set of hardware we have added DELTA's own File Management (FMS) which provides the key to small system efficiency by enabling file management on a record-by-record basis in block mode, and CPM, business computing application can be handled with ease.

Whether you are an end user, a system designer or an OEM, the DELTA 2200 Series has something for you.

Do you want to know more? Call DELTA today. Or see us at Peripherals '82 exhibition, West Centre Hotel, March 31st to April 1st.

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X.25 and Other Protocols for Long Haul and Local Area Networks

Discover the full potential of packet switching and local area network protocols. Learn how X.25 can cut your communications costs, increase the capability of your networks, make simultaneous multiple connections and handle spool and code conversions, all without additional hardware costs or more leased lines. Peggy Karp and Don Weir, two international authorities on CCITT standards and protocols, will also discuss X.3, X.28, X.29, and X.75.

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Make the magic of computer networks work for your organization! Networks can now communicate locally or internationally in a matter of seconds. Dr. Leonard Kleinrock, the world's most authoritative expert on computer networks, will guide you through the realm of network possibilities which can meet your corporate communications needs. Understanding network use, operation, evaluation and design issues. Dr. Kleinrock, the author of three classic books in the networking field, finally brings this extremely popular seminar to Europe.

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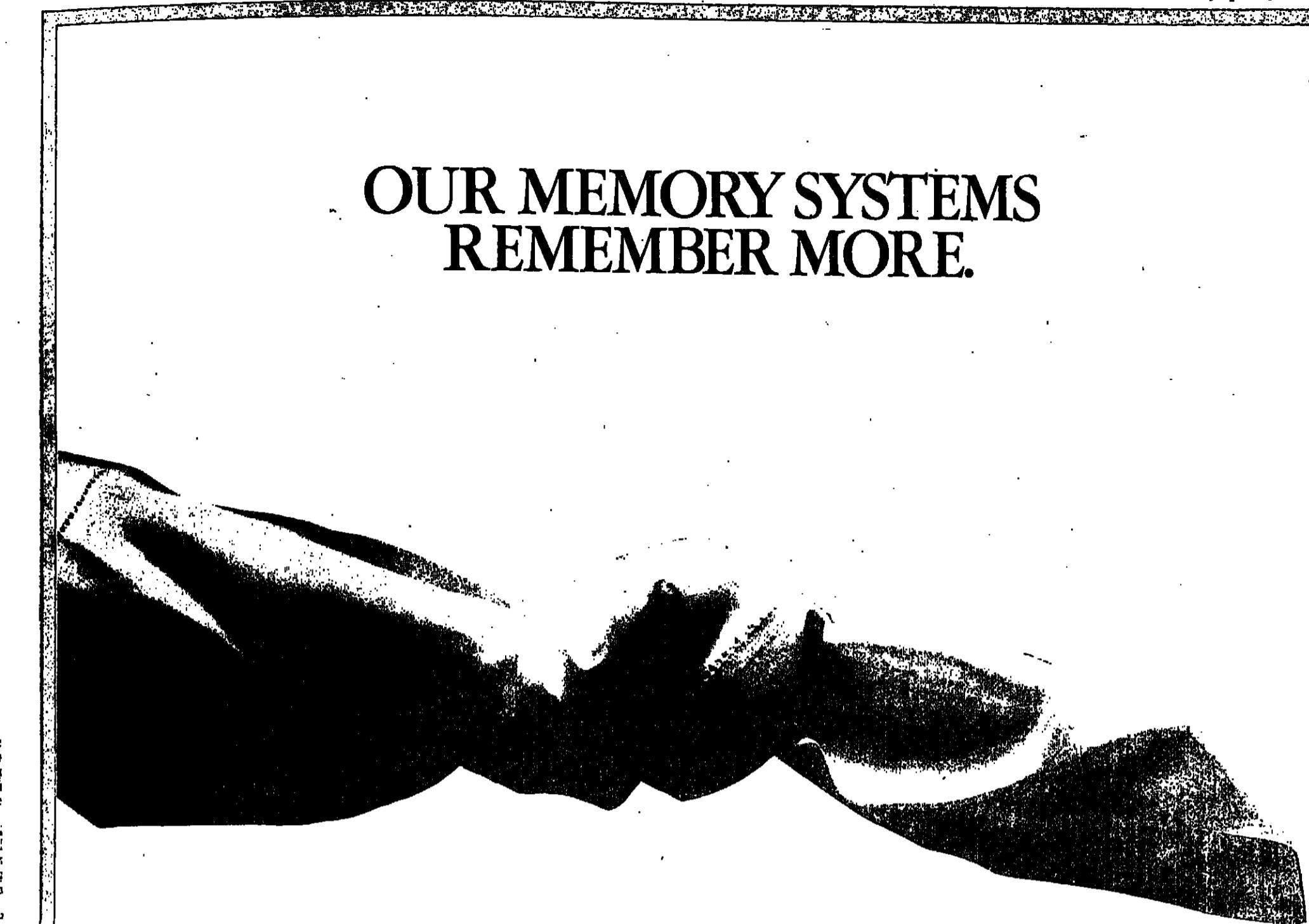
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Telephone: 01-570 2323

Economy, however, is not the only reason why we have over 4,000 megabytes of memory installed world wide. Technical experience and expertise provide

SOFTWARE FILE**Flood of software for 68000**

A DELUGE of application software for Motorola's 68000 microprocessors is likely in June, when Digital Research opens the floodgates with a CP/M operating system for the 16-bit device.

The CP/M system has become standard for 8-bit micros, and a CP/M-86 version has been developed to run on Intel 8086 16-bit machines, so a vast quantity of CP/M compatible software already exists.

Digital Research has now signed an agreement with Hitachi, one of five second sources of the 68000 microprocessor, to develop an operating system and several application languages. This will include an implementation of Pascal/MTC.

"Our policy is first to get the best commercial languages on, and then to concentrate on productivity aids," said Gordon Eubanks, vice-president of Digital Research Language Division.

A recently signed agreement with software house Micro Focus has given Digital Research rights to sell CIS Cobol, the first full



EUBANKS . . . First, the best commercial languages.

Pharmacists' system triggers NewBrain sales

RECOVERED from losing the plum contract for the BBC's computer education series, the NewBrain microcomputer has bounced back with another major contract.

Widely expected to be the choice for the television series, the NewBrain was sold by its developers Newbury Laboratories to Grundy Business Systems, who then saw the coveted contract go to the Acorn.

Now, however, a system for pharmacists written by Leasco Software has triggered off sales of 2,000 machines and installations are running at 60 per week, according to Leasco.

Details of drugs required are then sent to Vestric's three ICL 2960 mainframes at Speke, which respond immediately with acknowledgements or error messages.

Level 2 will extend the system to do prescription labelling, and Level 3 uses expanded disc memory to create individual

patient records so that the pharmacist can check on dosage. Point of sale terminals can be added to the system at Level 4 to include over-the-counter sales.

"We are also hoping for a future link with Meditel, the closed user medical group on Prestel," commented Rex Ingram, manager of Leasco's micro applications group.

The importance of the labelling system was stressed by Mike Dunk, special projects manager for Vestric.

The system links the retailer with pharmacists all over the country.

"Consistency in drug code is vital in the pharmaceutical industry, and the Link system can be adapted for either PIP or EAN coding, which are universally accepted," he said.

Link was shown at the Arab Health Exhibition held recently in Jeddah, and generated a great deal of interest, according to Ingram. Plans are under way to provide labelling systems that shows drug and dosage details in the stores, then prints out labels in Arabic.

The company is targeting its efforts initially at the worst hit areas of the UK, the North-east, the North-west, parts of Scotland and Wales.

Ward emphasised that

the company will not act as a venture fund, says managing director Jack Ward, a former director of Control Data UK, though it may invest in individual projects. It will provide advice and consultancy services linking entrepreneurs with essential technology, and finance, from both private and public sources, he says.

Its role will be advisory, and its revenue will come largely from consulting fees, and from the transfer and licensing of technology from other centres.

Control Data will provide the technological input, and the other four members, British Steel Corporation (Industry), Pilkington Brothers, Co-operative Bank, and Sun Life Assurance will provide the other support services new businesses are likely to need.

Ward emphasised that

Worldtech is looking for active partnerships with local authorities. The company claims to be looking for longer time scales on new enterprises than has hitherto been possible. Typical time scales will be between five and seven years, during which the company



WARD . . . Local co-operation is essential.

COMPANY NEWS**Group to aid technology in small firms**

by Kevan Pearson

A MAJOR drive to provide new technology and management skills for new companies was unveiled in London last week. Worldtech Ventures, a consortium of five large companies including US computer company Control Data, will provide technology transfer and management, financial and marketing consultancy to new or small businesses in the UK.

A major thread in the venture will be Control Data's experience of similar projects in the US, and its database of technology which holds 20,000 items of information about techniques and technologies, which will be available to the UK venture.

The company is targeting its efforts initially at the worst hit areas of the UK, the North-east, the North-west, parts of Scotland and Wales.

plus and Superplus IV, had created a strong order backlog. As a result, he said, "we expect to maintain our rate of growth at least through the next six months."

Production capacity will be doubled in 1982, Leng said, and this would help to maintain the company's claim of being one of the world's three largest manufacturers of word processing equipment.

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Olivetti 'leads WP market in Europe'

by Kevan Pearson
THE European word processing market is being dominated by the Italian company Olivetti, which leads in terms of installed systems in seven countries including the UK, France and West Germany, according to a recent report by word processing specialist Keith Wharton Consultants of Richmond, Surrey.

This represents a significant turn around in the fortunes of the company, which only four years ago reported losses of almost £28 million (lire 88,000,000,000). Its profits for 1980 were over £20 million.

It also includes shared resources systems like Wang's VS system, capable of handling both data and text processing.

The total installed base of word processors was just under 18,000 at the end of 1981, a rise of almost 5,000 systems over 1980.

Thin window and partial page systems each have about 35% of the market, and full page systems represent about 18%.

Keith Wharton, who set up the consultancy, reckons that the ratio of about four to one is right for the split between the low cost systems and those with a full page display.

of this range for a fully configured system. Olivetti also makes heavy use of retailers and dealers, rather than large direct sales forces like IBM.

The report defines a word processor as a text processing machine with some form of screen-based display, so it includes thin window systems capable of displaying one line of text, and partial page systems with up to 24 lines as well as full page systems. It excludes even the most sophisticated memory typewriter.

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ANNOUNCING THE LAUNCH OF THE SOFT OPTION**May sees**

the start of a totally new journal for software advertisers.

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software

First issue, May 1982

Contact Gordon Bradley: 01-661 3126

SOFTWARE BRIEF
Management package from I.P. Sharp

PROJECT management package Sharp Network Analysis for Projects (Snap) is to be launched in North America and Canada.

Written in Sharp APL, Snap is to be demonstrated by Ken Chakalwala of I.P. Sharp Associates in Vancouver, Calgary, Toronto and Ottawa.

Basic aids

THREE aids for programmers working in Microsoft Basic have been developed by Torchgate, a South London-based software consultancy. They are Spacersaver, to reduce program size and optimise disc storage, a debugging aid called Find, and Com-Load, a routine to allow the running of CP/M Com files direct from the interpreter.

Available individually for £24.95 each, the modules may also be bought collectively as the Workmate package for £49.95.

Members' store

CONTINUING the trend for house microcomputers backed by bureau services, a subsidiary of CMG Computer Management Group, CMG West End, has launched a membership records system for professional bodies.

Called Microform, the system uses a database held at CMG's main data centre to store member details.

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HUMAN TOUCH

Stepping through the screen

A SCREEN-FULL of data is usually entered by a process best described as stepping through the screen. The cursor moves from field to field as the data is entered.

The workload imposed in the operator's brain by this stepping through the screen process is considerable — the eye has to move from document or other data source, to the screen and probably back again. At some stage the keyboard receives attention as the eyes search out the keys.

This constant searching is probably more fatiguing on the eyes than that from the luminescence of the screen.

Fatigue induces errors, and should be avoided where possible. Good form design goes without saying. The same sequence of fields on the form and on the screen is common sense. The keyboard layout we are stuck with — it might theoretically be possible to improve the keyboard layout, but no-one is prepared to be the first to change.

That leaves us with the screen — about the only area where a reduction in the fatigue of searching can be reduced to zero. All input can be to a single point of eye contact, say at the bottom centre of the screen.

At that bottom centre point the prompts are presented and the data



Cliff Dillaway is an independent consultant specializing in accounting software, taxation and payroll. This weekly column will try to suggest how computers can be made to work better with people, rather than the other way around.

taffics entered. On entry, the data may be transferred by the program to its correct position on the screen while the next prompt is presented.

The operator has the screen-full if it is needed, though entries are not made all over the place but at a constant position.

A blank cursor naturally attracts the eye which is very sensitive to movement just outside its point of focus. But natural attraction does not mean without fatigue. The operator who has to search the screen several thousand times a day is going to be more tired than the operator who works automatically between one point on the screen and the documents.

Cliff Dillaway

FOCUS**Going paperless**

PAPER manufacturers, forest owners and even lumberjacks could be feeling edgy about the promotion of the paperless office. Teletext, electronic mail, intelligent VDU terminals and word processing machines are all conspiring to abolish the basic ingredient of office life.

IBM, for one, has well and truly latched on to the paperless office theme. Its latest promotion brochure features an office manager overwhelmed by stacks of paper and files. The general theme is that an IBM small computer can solve business problems and control paper flow.

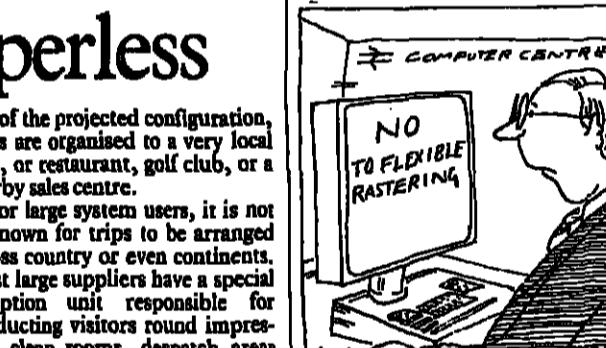
The computer company could also be hoping that by clearing some space on the executive's desk, room will be found for the all-important terminal. However, any cutback in computer paper usage is probably compensated by the current levels of lavish industry brochures. Selling advanced level electronic technology makes heavy use of paper resources.

Digital Equipment is similarly directing lavish brochures towards the small businessman. Its publication, *The Easy Way to Buy a Small Business Computer*, makes no claim on paper saving, possibly because its typical business configuration includes a high-speed line printer, a device not noted for reducing paper flows.

Both companies — along with most other small system suppliers — concentrate on the ease of selection. But the selection stakes are a piece of datacake compared to that of implementation.

The selection enterprise can be the most pleasing aspect of the computer project. It is the time when vendor management put in a personal appearance — an event not likely to be repeated once the order has been signed. It is also the time when prospects are invited behind the exhibition stands where hard drinks are more in evidence than hardware.

And it is the time when the prospective user is offered the opportunity to travel. Depending on the

**Affluence of incoh**

WHEN the wine is in, the wit is out," wrote a dry philosopher some centuries ago. Not so, say many in the computer industry. Last week I reported how an Irish programmer benefits from a strategic plan pursued by a drop of Jameson.

Since then another programmer who shall be nameless, has adapted the above aphorism for his own metabolism: "When the wine was in yesterday, the wit is today."

The morning after a binge, he tells me, his head is spinning with ideas.

Why not drop me a line, c/o Computer Weekly, and tell me how alcohol affects your performance at work?

The best reply will win an inch of space in this column. Second best, a foot.

The biter bit

THE offices of the mythical fort-nightly Private Eye are often mistaken for a brothel, according to what we hacks can informed sources. And a mole murmur that the Eye's editor Richard Ingrams is incensed by the invidious innuendo.

Excuse me while I reach for a handkerchief. Meanwhile let us ponder that even the thickest skinned in the business has a nerve centre that can be exposed by a well-aimed bullet.

Ross recommended an extra four duvarts and 10 additional staff.

Who says that computers don't create jobs?

Richard Ingrams is 64.

These foolish things

COMPUTER WEEKLY is far too old and wise a journal to be lured into April foolishness.

But I will tell you of a prank played on a friend of mine one April 1.

He was sent a parcel containing a black sphere two inches in diameter and the weight of a baby's bat.

Writing it off as a dull piece of work, the visitor finds himself being given a tour of the region and later the delights of the local nightspots.

DP reality arrives on the installation scene shortly after the contract has been signed, sealed and delivered. Delivery now becomes a major issue. Either the machine will be available next week with software to follow in the next quarter, or delivery will be spread over several months with associated timescales of software and peripherals.

The computer company could also be hoping that by clearing some space on the executive's desk, room will be found for the all-important terminal. However, any cutback in computer paper usage is probably compensated by the current levels of lavish industry brochures. Selling advanced level electronic technology makes heavy use of paper resources.

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10 YEARS AGO

From Computer Weekly of March 30, 1972

THE government announced plans to establish a central computer agency as part of the Civil Service Department. It would have a staff of about 600 and would procure government computers, handling a budget of about £30 million. Memorex, known for disc packs and plug compatible peripherals, entered the mainframe business with the introduction of two commercial data processing systems, the IBM-compatible MX4/40 and 50.

In a bid to win a larger share of the growing small computer market, Computer Technology reduced prices of its equipment by about 20% and agreed in principle to supply ICL with front



Alwyn Jones is senior tutor in business systems analysis at City University in London, and acts as a consultant in the public and private sectors. His special interest is in the application of systems ideas to the practical systems analysis and design.

standards in general.

He urged that the DP manager

should be relieved that so much

activity is now taking place on his

behalf, but added a justified note

of caution about the apparent

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mittees involved.

It is indeed quite likely that a

conscientious DPM would be

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In the very next edition Frank

Taylor reported on the proposed

new standard from the Interna-

tional Standards Organisa-

tion (ISO) for the specification of Open

Systems Interconnection (OSI).

(Is there perhaps a need for stand-

ard rules on the adoption of me-

canonics?)

My earlier column was really

about a British (BSI) sponsored

standard concerning the control of

Data for Interchange at the Appli-

cation Level (DIAL), and talking

about interconnections I forgive

you for wondering whether there

might not be some between OSI

and DIAL. (Yes, I'll wait while

you look those up again.)

All right now? No, of course not, since you now have none of

the documents before you that will

enable you to understand what

either of these standards is about.

Well, let's look at excerpts from

the introductory material to both

OSI and DIAL draft proposals:

• OSI is a concept for the de-

velopment of standards so that any

computer, terminal or peripheral

may be connected to any other in

order to exchange meaningful in-

formation. Each sender need not

know the technical characteristics

of the recipient, only that he ob-

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Call a computer if you seek the ideal date

COMPUTER dating agencies are often criticised for exploiting loneliness, building castles in sand for people in need of secure foundations. Some even regard them as a bit of a joke.

Nonsense, is the resounding reply of London-based Dateline Computer Dating, the first and largest computer dating agency in the UK founded in 1966.

We are simply in the business of creating fun and happiness, the staff appear to sing in chorus to a sceptical observer.

Dateline's ebullient spokeswoman Jo Fountain claims 1,000 marriages a year as evidence of success. "Exact statistics are difficult to get since we are not a marriage bureau, but we have been told of getting on for 16,000 marriages from our former clients," she says.

The programs which give hope for Dateline's 46,000 clients run in Basic Plus on a PDP-11/34 processor with 256K main memory.

The data is stored on a 160 Mbyte Winchester system running in parallel with two older 40 Mbyte drives. Recently a new suite of programs was written based on a questionnaire compiled by Dr Robert Sharpe of the Institute of Behavioural Psychology. The new programs build matches on a more flexible basis taking into consideration that unlike personalities sometimes attract.

The process of finding someone's courting companion begins by eliminating obvious non-starters.

These include the same sex, people from outside the desired area, and anyone else ruled out of court by answer to the questions dealing with the kind of person wanted.

For example, "political extremists are hard to match," says Fountain. In fact it seems there are not too many extremists on Dateline's books. For Fountain continues:

These sections are: Personality,

type of relationship wanted, lifestyle and work. The four scores are derived independently, but are then correlated according to the individual answers given.

Having excluded the impossible, the system now has to find the probable from among the possible. So begins the character analysis, which is split into four sections from which four independent scores are accumulated.

Sometimes a quiet person needs a spark of excitement, but is wary of asking for it, Fountain explains. Similarly an extrovert or hyperac-

tic type might need calming down.

Of Dateline's members 86% are under 35, but all ages are well represented. The normal membership fee is £56 for a year, but girls under 25 and men over 55 get half price, simply to balance the numbers.

"There are more men than women under 25 and more women than men over 55," Fountain explains.

She emphasises that Dateline is not just for outcasts and inadequates. "Glamorous professions are well represented. Many of our female members are air hostesses, and there are plenty of doctors and nurses who all work strange hours," she continues, giving some insight into why people might find Dateline helpful.

Dateline will not take anyone. Homosexuals, congenital idiots and prisoners are, for example, excluded. "These we will pass on to the relevant bodies," says Fountain.

What happens when people find no joy from Dateline? "We might ask that they remove some of the restrictions," replies Fountain. "Or if they are fat we might suggest they go on a diet."

Although Fountain admits that fat people can look elegant if they dress properly.

One final statistic: Dateline receives more post than the BBC.

FOUNTAIN... Hard to find dates for political extremists.

"If someone wants to meet only political left wingers, we ask them to be less restrictive on other accounts."

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Although Fountain admits that fat people can look elegant if they dress properly.

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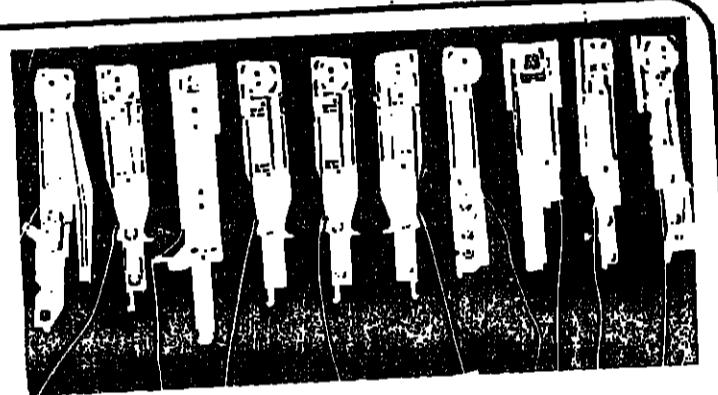
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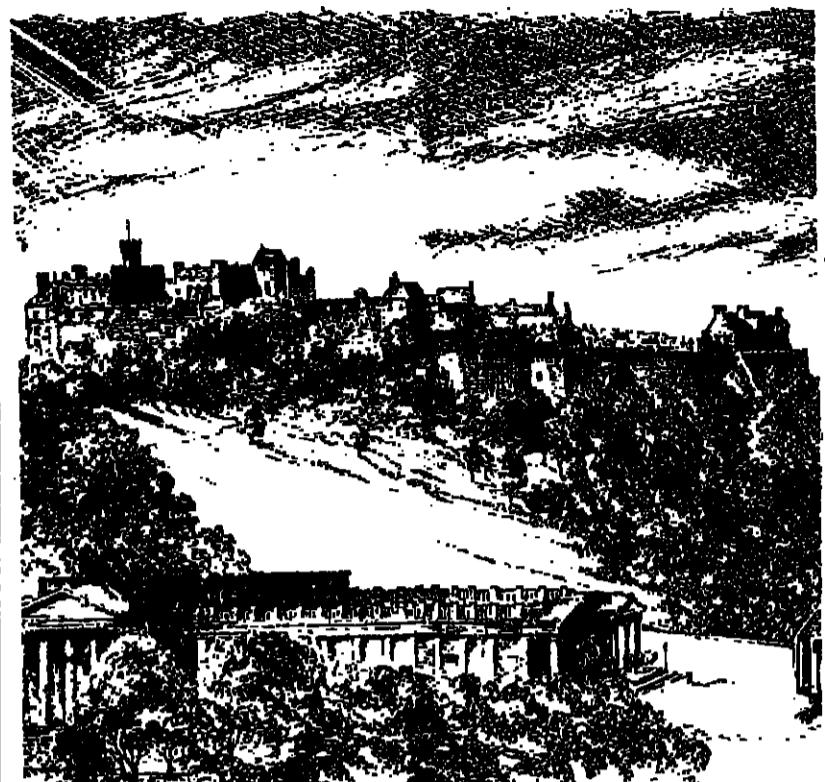
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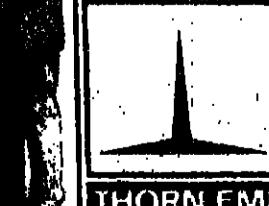
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Fortran/Graphics

Cambridgeshire: Salaries to £10k

A Cambridgeshire based supplier of Graphics Systems is currently seeking additional FORTRAN Programmers. Suitable applicants will be educated to degree or HNC standard and will have a minimum of one year's subsequent FORTRAN programming experience in a technical or scientific environment. Whilst particular hardware experience is not important, candidates who have had exposure to CDC or Prime based systems will be of particular interest to our client. It is preferable, but not essential for all positions, that you have some knowledge of graphics applications and/or graphical devices. However, applicants who can offer good FORTRAN programming skills and who have a desire to gain experience on graphics based systems will be offered excellent in-house training. Ref. L13/F

Communications Programmers

Central London: Salary to £10k

A number of Development Engineers are required for the Communications Division of a market-leading supplier of message and packet-switching systems. Of particular interest to our client will be Programme/Designers who have at least two years' experience in the design and development of terminal controllers and protocol converters. Ref. L13/G

Database & T.P. Consultants

London/Berkshire: Salaries to £16k

An internationally renowned supplier of Database, Teleprocessing and Financial Management Systems is currently seeking additional Consultants to be based in either the Company's Headquarters in Central London or their regional office in Berkshire. Suitable applicants should offer a minimum of five years Data Processing experience, preferably gained in an IBM mainframe environment. It is essential for all positions that you offer experience in the areas e.g. CICS, ENVIRON or SHADOW and you should have an in-depth knowledge of an IBM compatible DBMS. Career prospects are excellent and there will be opportunities for applicants who wish to specialize in database design, administration, or system development. Ref. L13/H

Ref. L13/H

COMPUTER & ELECTRONICS RECRUITMENT

UK and International Career Opportunities

In addition to the salary ranges quoted, the following positions carry excellent benefits.

UNITED KINGDOM

WEST END to £15,000 and car
Senior Consultant

Our client, a leading computer consultancy require a professional with at least 8 years of D.P. experience including applications and systems programming. The successful candidate will provide network database and programme design skills for public videotex systems internationally.

HAMPSHIRE to £15,000
Programmers

A high calibre software house requires several programmers, preferably with experience of some of the following: PASCAL, FORTRAN, GEC 4000, DEC/VAX; RSX II, OS 4000. The applications will be varied and stimulating.

BERKSHIRE to £15,000
IBM Assembler Programmers

A well established computer house have a continuing need for Assembler Programmers with at least a year's experience and preferably, with a degree.

WEST END to £14,000
Analyst/Programmers

If you have at least 3 years IBM 3200 DOS/VSE experience, using ADABAS and NATURAL, this position with a leading computer consultancy, offers excellent financial and professional rewards.

CENTRAL LONDON to £12,000
Software Programmers

This is an excellent opportunity for programmers with experience in a real-time environment and including some mini-computer involvement. You should have at least six months Babbage exposure.

CENTRAL LONDON to £12,000
Design Consultants

To provide technical consultancy, specialising in Videotex for deployment in private and public markets. You should have at least 3 years experience in communications and packet switching.

NORTH LONDON to £11,500
Real-time Software Programmers

A leading electronics firm require Software Programmers with communications, military or industrial experience to produce software packages and to integrate and prove systems. Our clients will be particularly interested in candidates with Coral 66.

WEST END to £11,000
Analyst/Programmers

An oil company requires several Analyst/Programmers with a background in COBOL, preferably under MVS, to work on a variety of applications.

NORTH LONDON to £10,000
COBOL Programmers

This is an excellent opening for programmers with at least 2 years COBOL experience, ideally on Honeywell hardware to work on manufacturing systems for a large electronic engineering company.

NORTH LONDON to £10,000
Database Designer

A chance to control a small team in designing and implementing a database for several D.P. systems. Our clients would prefer you to have a degree in a numerate discipline and require that you have at least 2 years database experience.

NORTH LONDON to £10,000
Systems Analyst

If you have 2 years S/A experience, preferably with engineering applications, you will be a prime candidate for this position. You will have a considerable user contact, and will have the opportunity to design and implement a variety of projects.

WEST END to £10,000
Systems Programmers

A leading computer consultancy require professionals with FORTRAN and RSX II M experience to take charge of software design, programming, and implementation with a wide range of customers.

ILFORD to £9,500
Analyst/Programmer

A progressive company within the building industry need an experienced RPG II professional, user-orientated, to work on a variety of financial and commercial applications utilising our clients IBM system 34.

INTERNATIONAL

BELGIUM to £21,000
PL/1 Programmers

Our clients require computing professionals with at least 5 years PL/1 experience, systems analysis involvement, and considerable telecommunications exposure. Any experience of PASCAL and CORAL would also be desirable for this unusually fine opportunity.

HOLLAND to £12,500
PL/1 Programmers

A well-known international company require 4 programmers with PL/1 and IMS experience to become involved in considerable client contact and the design and implementation of new programmes.

HOLLAND to £12,000+car
Programmer/Analyst

An international consultancy seek an RPG II programmer who is prepared to learn Dutch to design and implement a number of applications throughout Holland.

Please send c.v. to Jim Mackay, Charles Barker Management Selection International Ltd., 30 Farringdon Street, London EC4A 4EA or telephone 01-236 0588 for further information.

Charles Barker
MANAGEMENT SELECTION INTERNATIONAL LTD.
Associated offices in 6 cities throughout the world

Salesman Manufacturing Systems

LONDON BASE

EXCEPTIONAL EARNINGS PACKAGE

Cullinane (U.K.) Ltd., is a wholly owned subsidiary of Cullinane Database Systems, the world leader in independent data management software on IBM and plug compatible computers. Cullinane's software products comprise a comprehensive information facility designed by specialists in data management and on-line applications. The power and flexibility of Cullinane's database management system software build the foundation for fully integrated, efficient application systems that address the individual needs of business environments. THE CULLINANE INTEGRATED MANUFACTURING SYSTEM (CIMS) is such an application designed specifically for the manufacturing environment.

To market CIMS in the U.K., we are seeking to employ a salesman with a proven track record and experience in selling computer based manufacturing systems. The product is new to the U.K. and we are looking for someone who has sufficient knowledge of manufacturing systems to recognise its quality and the experience to develop a largely untapped market-place.

The company recognises the problems involved in marketing a new product and is prepared to guarantee the income of the salesman employed. Full technical support is provided and it is hoped that the person employed for this position will have the competence to become the U.K. Sales/Marketing Manager with responsibility for the marketing of the product and the selection and management of both sales and support staff.

For further details, telephone or write to Kevin McCourt quoting ref: 6044.



**Lloyd Chapman
Associates**

123, New Bond Street, London W1Y 0HR 01-499 7761

THE POLYTECHNIC - WOLVERHAMPTON COMPUTER CENTRE
Senior Analyst/Programmer
Responsible for Administrative computer applications including computerised information systems and library systems, on PRIME computers. Experience of COBOL and systems analysis and design essential.
Salary: £11,000-£12,000 per annum.
The Polytechnic Wolverhampton is an Equal Opportunity Employer and all franchises are open to all, all races, all creeds and disabled people.
Details and application forms (returnable by 1 May, 1982) from: Establishment Class: The Polytechnic Wolverhampton WV1 1SB. Tel: (0902) 710554 24-hour answering machine.

(0902)

**LIBRARY SYSTEMS MANAGER
SALARY NEGOTIABLE TO £10K**

We are looking for a self motivated person able to design, implement and develop an on-line real-time system for which this post has been newly created within the Library Service. For an informal chat about the post, ring Bruce Bellamy on Uxbridge 60701. Fringe Benefits may include 75% removal expenses, legal fees involved in house purchase, up to a maximum of £800 and a lodger allowance in approved cases.

Hillingdon is situated on the western outskirts of Greater London and borders Buckinghamshire and Hertfordshire. One third of the 42 square miles of the Borough is Green Belt with attractive residential areas. Central London is within easy reach.

Application forms (returnable by 16 April) and further details available, quoting reference LB6142X, from the Personnel Division, Civic Centre, Uxbridge, Middlesex UB8 1JN. Tel: (0895) 410100. Uxbridge 60898 24-hour answering service available. Applications from disabled persons welcome.

(0895)

**Senior Analyst/Programmers
Real-Time Systems
(Bracknell, Berkshire)**

The Person
You should have a good degree in Computer Sciences and a minimum of 5 years experience of real-time systems on mini-computers and experience of program specification, design and

The Job
You will design, implement and document real-time software to run on systems based on the Motorola 68000 device and development work will be on a PDP11/44 and the Motorola 68000. The systems will perform machine control and data handling functions on a scale normally associated with large multi-mini-computer installations. Systems will communicate with high-speed local area network.

The Company
A company recently established to exploit the field of computer technology primarily in support of the TV broadcast industry. The company can be expected to expand rapidly offering a real career and excellent career opportunities for those interested.

The Rewards
A competitive salary commensurate with experience is offered. Full pension scheme, private medical insurance, pension and flexible working hours. Considered to this is the attraction of working in a small expanding company and the interest which stems from continually

HERTFORDSHIRE COUNTY COUNCIL

Junior Systems Analyst
Salary £9150-£9687 pa inclusive

Due to an internal promotion there is a vacancy for a junior systems analyst within the Computer development team.

Applicants should have at least 1 year's sound experience either in programming or analysis, preferably with a formal qualification in systems analysis, and be educated to at least 'A' Level standard.

During 1982 the implementation of an exciting new development strategy will commence to introduce personal computing, office automation and communications networks into the user departments. Experience in this field would be advantageous.

Generous removal, disturbance and lodger allowances payable in approved circumstances and assistance with housing may be given.

Applications (no forms), giving details of experience and the names and addresses of two referees, to the County Treasurer, County Hall, Hertford, quoting reference C246, by 12 April, 1982.

(0492) 410100

FINANCIAL TIMES

The Financial Times newspaper is in the process of computerising its accounting function on a PDP 11/70 configuration. We are looking for computing professionals with good experience and preferably with a knowledge of accounting procedures.

SYSTEMS ANALYST (£10,794 p.a.)

Our requirement is for an experienced Systems Analyst to play a major role in the development of new on-line applications. This is a position of responsibility within the data processing department. The successful applicant will have had a significant involvement in the investigation, design and successful implementation of at least one major project.

SENIOR PROGRAMMER (£9,264 p.a.)

Our requirement is for a person with a sound background in BASIC+2 programming under RSTS/E. Benefits include five weeks' holiday after one year of service, company pension scheme, LVS and season ticket loan scheme. Please write with full c.v. details or telephone for an application form to:

Miss Susan Smith
Personnel Department
The Financial Times Limited
Bracken House
10 Cannon Street
London EC4P 4BY

071 834 1749

myriad



TYMSHARE UK

APPLICATION CONSULTANTS

Tymshare has become the fastest growing Computer Services Company in the UK following its policy of Industry Specialisation and its standard of excellence in systems and customer support. Their dramatic growth has created openings for both Experienced and Trainee Consultants for their London City Area, to be involved in pre-sales support and system development projects.

If you are a graduate with the ability to:

- ★ Conduct System Requirement Studies
- ★ Manage Database Projects
- ★ Apply State of the Art Software Technology

then in return Tymshare can offer an excellent career path and an attractive remuneration package including company car.

Please reply to: Mr Keith Roberts, Area Technical Manager, Tymshare UK Ltd, Brettenham House, Lancaster Place, London WC2, or phone: 01-379 7822

Myriad Appointments Limited

30 Fleet Street, London EC4Y 1AA Telephone: 01-353 0981 24 hours
50a London Street, Reading, Berkshire RG1 4SQ Telephone: Reading (0734) 585802 24 hours

Sales Opportunities

With a network of offices throughout the U.K., our client is a well established OEM with single-vendor responsibility for sales, installation, commissioning and maintenance.

The company is part of one of the largest and most experienced operating companies in the world and is now looking to expand its U.K. operation.

They are currently seeking experienced salesmen to sell into two areas:

Telecommunications Salesmen (London) c. £22K + Car

The successful applicant will have at least 2 years' selling experience with a Telecommunications company and should have a proven track record of achievements.

Peripheral Salesmen (London & Scotland) c. £20K + Car

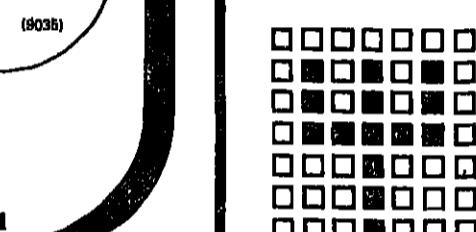
To sell a range of products. The successful applicant will have at least two years' experience selling VDU's, printers and terminals.

With generous basic salary, guaranteed at £12K, with no upper limit on earnings, this is a most attractive remuneration package.

For further information contact Kate Nash quoting ref: 6041.

Lloyd Chapman
Associates

123, New Bond Street, London W1Y 0HR 01-499 7761



ARE YOU AN OPPORTUNIST?

Systems Programmer up to £13,000 p.a. Thames Valley

Our client, an established and highly successful company in the F.M.C.G. Industry are expanding their Data Centre to incorporate systems development for recently acquired Group Companies with further redevelopment of existing corporate systems, keeping abreast of the latest computer techniques and software.

The introduction of a manufacturing requirements planning package and on-line order entry systems, resulting in a network expansion of batch and interactive facilities has created a new opening for an experienced Systems Programmer or a professional with IBM software expertise eager to develop a career in a specialised environment.

The configuration: Currently IBM 4331, VS1, CICS, VSPC, VTAM and NCP upgrading to 4341 (Model 11) MVS, TSO and Database implementation in September '82.

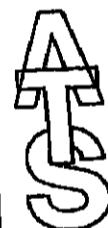
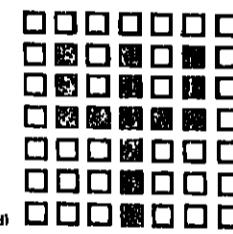
The position: Working in a small, enthusiastic and go ahead team initially providing expertise and advice to user departments on CICS and Database systems but also installing new software for production systems scheduled for January '83.

The person: 18 months + OS VS1 or MVS with T.P. and preferably Database experience. Full training will, however, be given for the right applicant.

The benefits: 24 days' holiday - product discount - full relocation - free car parking - subsidised restaurant - pleasant working conditions and location - active sports and social club.

Contact: Bill Evans on Camberley (0276) 64252 to arrange a formal introduction or write enclosing career details to the address below.

TRIDENT COMPUTER SERVICES PLC.
THE PARADE
HIGH STREET
FRIMLEY
CAMBERLEY, SURREY
GU16 5HJ



ADVANCED TECHNICAL SERVICES

RPG LONDON £8,000-£12,000
Whether you have one year's exp or several of IBM RPGII we have a number of clients who urgently need analysts and/or programmers to assist them on financial and commercial applications. Excellent opportunity to progress on to System 38.

IF YOU ARE A CICS/COBOL PROGRAMMER WE ALSO HAVE URGENT REQUIREMENTS IN BEDFORD, SURREY AND CENTRAL LONDON, MIDDX. Salaries up to £12,000

RPG

SYSTEMS ANALYST CITY £10,500
If you have a minimum of three years' systems analysis experience on IBM equipment this is a super opportunity to work for a forward thinking D.P. department in a substantial City company.

SNR PROG AND ANALYST LONDON c£11,000
Large bank requires the above to work on their Burroughs medium systems, previous international banking investment, or insurance background required. Usual banking perks.

PROGRAMMER SURREY £8,500
A major leisure company require a Programmer with a minimum of 2 yrs' COBOL on minis, commercial or accounting systems experience, to join a large systems development team.

BUSINESS SYSTEMS EXECUTIVE SURREY £13,000 + Car
To act as internal consultant for our clients to assist in the improvement of efficiency and profitability by use of better information systems and improved business methods and procedures.

SNR SYSTEMS PROGRAMMER S.ESSEX Up to £12,000
Our client, a major financial company, is looking for a very experienced Systems Programmer to work on teleprocessing technical development. You should have sound knowledge of CICS and be able to communicate at all levels.

PROJECT LEADER/SYSTEMS ANALYST MIDDX Up to 14k + Benefits
Our client in Middx is looking for a senior analyst with proven experience in design/development and implementation of new systems, initially to travel to Parent company in USA, to familiarise themselves with new techniques in design and implementation, and on return set up a new design and development project for invoicing, order processing, and process control, DL1/DATA DICTIONARY experience preferred.

PROGRAMMERS/PL1 MIDDX £8,500
Two major companies in Middlesex are looking for 3 junior and 3 senior PL1 programmers.

ANALYST/PROGRAMMER SUSSEX £8,500
Our client is looking for an Analyst/Programmer with two years' sound practical experience with ICL 2900 or 1900 background and knowledge of TPS would be a distinct advantage, but training if necessary will be provided. This position will offer a real opportunity for further systems development prospect, so please call at once for interview.

BIKEN HOUSE 64 WILTON ROAD
LONDON SW1V 1DE. Telephone: 01-828 5792

EXCELLENT CONTRACTING OPPORTUNITIES

Our immediate domestic and international consulting needs are detailed below. If you are of a professional disposition, skilled and dedicated, and wish to join our growing permanent or contract staff, please contact us in respect of these and future opportunities.

INTERNATIONAL

RPG III, S38	Programmer/Analysts	New York
Strong IMS/DB skills	DBA or Designer	Holland
FOCUS	Programmers	USA
RPG II, S34, fluent French	Programmer/Analyst	W Africa
Airline Systems experience	Analyst & Programmers	Holland
Banking experience	Analyst	New York
ADABAS	Analyst/Programmers	USA

UK

COBOL, IMS/DB PL/1	Programmer/Analyst	Home Counties
VM/CMS	Analyst/Programmers	London
IMS/DB	Systems Programmers	Home Counties
COBOL, DB NOVA	Business Analyst/	Home Counties
RPG III, S38	Designer	Home Counties
BASIC, Superbrain	Programmer	Home Counties
Burroughs 6800	Programmer/Analyst	Home Counties
Screenwriter	Programmer/Analysts	Home Counties
Honeywell 16	Programmers	Home Counties

For more information please contact:

Resources Department
TANGENT COMPUTER SERVICES
102/106 South Street
Romford
Essex
Tel: Romford (0708) 750201
(24-hour answering service)



GET IT TOGETHER - WE HAVE!!

EXCITING OPPORTUNITIES EXIST IN:

SALES

GRAPHICS - Major commercial company with exciting new graphics products require dynamic, hard hitting salesman to form new team. Various locations and high earnings potential (NO1).

COMMERCIAL SALES B. W. of London. Well known multi-national company (new micro scope). UK base. £20K O/T (NO2).

OEM SALES - Mini - recognised as company paying high gross earnings, at least £22K. Vacancies around London. Also scientific sales vacancies in Midland and West. (NO3).

MICROS Selling to Dealers (OEM) and large End users. Lurex territory covering East City/South/East Anglia/Herts/Kent. £15K base. £22K O/T. (NO4).

SALES EXECS - Datacomme Vacancies in Yorkshire and Home Counties West of London. Work under technical salesman from outside.

MINI SYSTEMS - Manchester - Bristol, B'ham - £120K weeks training in California. Early management opps. CDW13

SENIOR SALES EXEC - Medical Sector - £22K+ An early opportunity for management. Involving large mini comp. sys. Govt. P.O.S. SALES EXECUTIVE - Based Nth London - £20K This challenging post calls for min of 3/4 yrs exp in comp-systems H/W. High

SOFTWARE SALES - London - Lancs - £15K+ Vware products. CDW13

BANKING-FINANCE - London & H. Counties - £18K Major leader needs sales execs with min of 2/3 yrs exp to cover all D. P. exp. to

DISTRIBUTOR SALES MANAGER - St. Louis - £18K Experience of printers - peripherals essential covering US territory + existing

CONSULTANTS - David Wilkinson
Norman Ocleton

ENGINEERING

FIELD SERVICE ENGINEERS - ALL AREAS - £15K + car

Willing to grasp an opportunity with a challenge - If so a leading multi disciplined systems co. with exciting growth potential need you now!

Rapid expansion has given rise to a number of unique positions to those who have at least 5 yrs field experience in micros, minis, printers and associated peripherals. REF: RP748

DEPOT/WORKSHOP ENGINEERS - All Areas - £7.5K

Enjoy responsibility? Then enjoy working for a leading systems company. Excellent future prospects are part of the rewards for those who can manage a workshop, if you have at least 3 yrs' practical experience on repairing VDU's, Printers, Floppy Disk Units and small micro-processor based systems, then apply now! REF: RP747

PROJECT ENGINEER - Southern Home Counties - £3K

Is working for an industry leader with responsibility a challenge you accept and are communication skills and training your strengths? If yes, then we have the opportunity for you. Apply now for a challenging position in a range of computer systems and electronic knowledge plus 5 yrs' field experience - then hurry to contact. REF: RP746

TECHNICAL SUPPORT SPECIALIST - £15K + bonus + Car

Are you an ambitious high flying systems engineer who is looking for that extra boost to his career? Then a leading UK systems support company have a national or European support position for applicants with experience on IBM 360 and 370 mainframe systems, VDU's, printers, minis, micros, disk drives, tape drives, OS/VS1 operating systems plus communications experience. REF: RP745

FIELD SERVICE ENGINEER - LONDON - £25K + car.

Interested in working as a field engineer with a company involved in the development of micro based systems? Enjoy working in a company which has major problems to solve - to move ever ever and fit into a fast growing company. If you can answer these questions with YES, then don't hesitate to contact us. REF: RP746

CONSULTANT - RICHARD PANTLIN

TEL: 01-437 3842 NOW (24-hrs.)

DATA PROCESSING

SYSTEMS PROGRAMMERS - London - to £15K

Systems programmers required by London engineering company with US connections. Experience of both VS1 and MVS and preferably conversion of one to the other. 1031

PROGRAMMERS - Central London - Negotiable PL/I or COBOL programmers wanted by leading International computer company. ADABAS experience particularly helpful. IBM 4300 machinery. 1026.

PLI PROGRAMMERS - London and Kent - to £10K

Several vacancies for 2 commercial houses. Minimum of 2 years' experience ideally with some assembler. Good chances of promotion. 1013/1024

ANALYST PROGRAMMERS - Essex - to £11.5K

Solid finance house needs Assembler Progs. with some COBOL and 6 months' analysis for their fast expanding IBM installation. Free pension, BUPA, relocation and inexpensive mortgage after 2 years.

ICL PROGRAMMERS - Essex - to £10K

Cobol programmers with a minimum of 2 years' experience. 2800 machines with DMS. Insurance experience useful. Profit sharing. 1041.

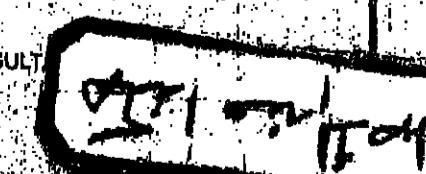
STOP PRESS: ICL Contract Programmers urgently required.

We have several positions for programmers and Programmers/Analysts with 2 years' experience on most machinery.

CONSULTANT - Don Burridge

SABAGE RECRUITMENT CONSULTANT
Lincoln Model House
32/34 St. Marlbrough Street
London W1V 1NA

Babage...place people...exactly!
(Licensed as an Employment Agency ref no. SE(A) 4942)





ABU DHABI NATIONAL OIL COMPANY

OPPORTUNITIES AVAILABLE FOR COMPUTER PROFESSIONALS

ADNOC is one of the major oil companies in the Middle East controlling the Exploration, Production and Distribution of Oil, Gas and Associated products in Abu Dhabi. We are providing Data Processing facilities under TP and Database environments to our Group of companies, with a wide communications Network and a number of mainframes. We require a wide range of suitably qualified and experienced DP staff in the areas of Petroleum Engineering and Commercial applications.

Vacancies exist in:

1. APPLICATION DEVELOPMENT AND SUPPORT

- SENIOR SYSTEM ANALYSTS
- DATABASE ADMINISTRATORS
- ANALYST/PROGRAMMERS & PROGRAMMERS

The candidates should have a university degree and 3 to 8 years' experience in one of the following areas: SYSTEM ANALYSIS, DESIGN and PROGRAMMING (COBOL/FORTRAN), PLANNING, QUALITY ASSURANCE, ICMS DATABASE and TP SYSTEMS. Some positions also require experience in Geological Databases, Contouring or Reservoir Modelling. A degree in Science or Engineering is required for these positions.

2. SYSTEM SUPPORT

- DATABASE SUPERVISOR
- SYSTEM ENGINEERS

The candidates should have a university degree and 3 to 8 years' experience in one of the following activities: ICL VME/B and IOMS Support, IBM DOS/VSE Support, COMMUNICATION INTERFACES and PROTOCOLS, NETWORK MANAGEMENT and PERFORMANCE ANALYSIS.

3. OPERATIONS

- SHIFT LEADERS
- SENIOR OPERATORS & OPERATORS
- PRODUCTION CONTROLLERS

The candidates should have adequate education and sound operational knowledge on large ICL and IBM mainframe operations. ADNOC benefits include a high tax-free remuneration, good career prospects, free medical care, free furnished family accommodation, paid home leave for the family and educational assistance.

Knowledge of Arabic for all positions will be an advantage. Interested candidates are invited to forward their detailed applications, together with photocopies of their education and experience certificates, within two weeks from the date hereof to:

PERSONNEL DIRECTORATE - EMPLOYMENT DIVISION
ABU DHABI NATIONAL OIL COMPANY - (ADNOC)
P.O. BOX 898 - ABU DHABI - U.A.E. (0056)

LANGTON

TELECOMMUNICATIONS CONSULTANTS

Salaries to £10,000 plus generous benefits package

Langton, one of the leading consultancies, are looking for telecommunications consultants to join a well-established team working in the areas of long range technical planning, networks, office systems, databases and new data.

Applicants should have 3 or more years' telecommunications experience, during which time they have undertaken consultancy work with users. Specialist knowledge of PTT services and data communications would be a distinct advantage.

Good self presentation is essential.

If you would like to know more, telephone or write to Colin Leeson

UNIVERSITY OF LONDON GOLDSMITHS COLLEGE
Computer Manager
Applications are invited for the post of Computer Manager to be generally responsible for the College computer services, based on a DTP VAX 11/780.

UMIST DEPARTMENT OF COMPUTATION

REF: COM/22/82 Applications are invited for a three year Research Assistantship working on an industrial project involving the application of speech recognition in the telecommunications industry. The work will involve the production of a speech recognition system to run on a PDP-11/44 host computer interfaced to a variety of speech recognition devices. The system will be mainly in Pascal but some use of AI languages such as PROLOG or LISP is envisaged. Applications should be sent to the Department of Computer Science or a related discipline and at least two years' programming experience.

Salary will be on the scale £9295-£2780 per annum.
Requests for application forms, quoting the above reference, should be sent to The Registrar, Room 88, UMIST, PO Box 88, Manchester M6 8HD. The closing date is 9 April 1982.

LANGTON
Langton Information Systems Limited,
103 Oxford Street, London W1R 1UD. Tel: 01-434 1031
0025

IMMEDIATE CONTRACTS FOR PROGRAMMERS

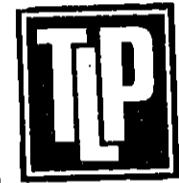
PROJECT LEADER Croydon IBM COBOL VM/CMS

PROGRAMMERS S. Coast IBM COBOL OS/MVS

ANALYST PROGRAMMERS London IBM PL1 CICS/ADABAS

ANALYSTS S. Coast IBM

ANALYST PROGRAMMERS London IBM Sys 34 RPGII



For further details contact NIC POLAND
TLP
A Division of Tate & Lyle Industries Ltd.
Leigh House, High Street, Croydon CR9 3NH
01-680 2323
A Member of the Tate & Lyle PLC Group



19055

INTERNATIONAL MICRO SPECIALISTS

c £17,000 + Bonus + Expenses

JMS International Inc., a major American management services company, is presently developing an important micro based system for the European medical community. JMS has a turnover of \$200M +, offices in over 40 countries and is already the leading company in this field in the US, Canada and Australia.

The star division systems utilize the latest micro technology, storage devices and peripherals, which must be kept up to date for commercial reasons. Extensive new applications are planned offering a range of interactive facilities for health, leisure and business applications.

Two senior people are now required to work on the further development and implementation of the systems.

APPLICATIONS SOFTWARE MANAGER

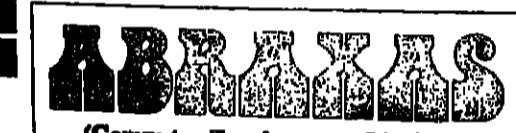
c £17,000 + BONUS

Working initially in Germany, with the base office in London, with a small, high calibre team, you will have responsibility for re-design, development, testing, implementation and documentation of the applications software. You will assist in the choice of software languages although it is likely some ASSEMBLER will be used. You should also have experience of systems Analysis, working directly with users, an understanding of micro operating systems and a degree.

Initial positions will entail regular travel of work abroad. Foreign languages are not essential but you must be available to work outside the UK for long periods, quickly forming working relationships.

The first implementation will take place in Germany and, after enhancements, the system will be extensively marketed in other European countries. Future projects within the group could take you anywhere the group operates, using a wide range of hardware.

For further information please contact SIMON BERRY by telephone or letter at the address below.
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To £10,000 + review after 6 months

Must have at least three years' RPG II experience in a financial environment with a knowledge of S/3 or S/34. You must be able to produce programme specifications, set and adhere to deadlines and take responsibility for all programming aspects of a project, including supervision of two or three other programmers. Good oral and written skills will also be required.

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To join our progressive and professional team please phone Ray French on 01-600 5666, or write direct to Manufacturers Hanover Trust Company, Queensbridge House, 60 Upper Thames Street, London, EC4.

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(0625)

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0401 **DEPUTY OPERATIONS MANAGER**
Deputy Operations Manager to supervise daily operation of large IBM 3031 installation (40 staff) in Jeddah. Minimum of 8 years' IBM operations experience with last 2 as Operations Manager of Deputy in large MVS - JES 2 environment with extensive local and remote on-line multiple user processing. Must be proficient in IBM JCL, Job scheduling, IBM negotiations/liaison, M/C room planning and shift supervision. Previous OS/VS1 experience an advantage.

0402 **TELECOMMUNICATIONS ENGINEER**
Minimum of 5 years' hardware installation/maintenance of IBM and IBM compatible VDU's, terminal printers, Modems and communication controllers. Practical experience of data/voice line installation/testing, network performance monitoring and design. Preferably knowledge of ACF/VTAM/NCP and BSC/SDLC protocols.

0403 **SENIOR PROGRAMMERS**
A number of vacancies exist for experienced Senior Programmers with IBM Assembler/COBOL in an on-line environment (CICS/COMPLETE) using Database (IMS, ADABAS). At least 6 years' programming experience is required.

0404 **OPERATIONS SUPPORT TECHNICIAN**
Minimum of 6 years' IBM OS/VS1 plus recent MVS/JES 2 experience, fluent in JCL, DASD Space Allocation/Management, as support Technician in large IBM installation. Practical experience should include Panvalet, FDR, IBM Utilities, Syncsort and TMS.

0405 **SHIFT LEADER**
Minimum of 6 years' as IBM Operator last 2 as Shift Leader in MVS/JES 2 preferably with the experience of CICS or COMPLETE. Should be fluent in IBM JCL, FDR, IBM Utilities.

0406 **SENIOR OPERATOR**
Minimum of 2 years' as Senior Operator in IBM MVS/JES 2 environment preferably with previous OS/VS1 background. Must be fully conversant with FDR, TMS and IBM Utilities.

0407 **COMPUTER OPERATOR**
Minimum of 1 years' OS/VS1 plus 1 year MVS/JES 2 in large IBM 303X installation as Computer Operator.

0408 **COMPUTER OPERATOR**
Minimum of 2 years' DOS/VSE on 4300 series as Computer Operator familiarity with CICS would be useful.

All positions are single status based within Jeddah or Yanbu. Comprehensive range of benefits include:

• Shift allowance (positions 0404 to 0407)

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Telephone 0293 440077

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ATA COMPUTER RECRUITMENT

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UNIVERSITY OF LONDON GOLDSMITHS COLLEGE

Applications are invited for the following new posts in connection with the installation of a new computing facility throughout the College:

1. Systems Programmer.

2. Applications/Advisory Programmer.

Post 1. This post will be concerned primarily with the systems development and support of the equipment and applicants should have substantial experience of the VAX 11/780. Salary within the range £13,000-£16,000 incrementing £2,000 per annum, depending on experience.

Post 2. Applicants should have experience of programming in BASIC, FORTRAN and COBOL and of using a variety of software packages. They will be required to assess existing systems and support the development of new systems to their clients. Salary within the range £12,720-£16,000 incrementing £2,000 per annum, depending on experience.

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If you feel that you can meet our exacting requirements, please send brief career details to EIS, Intel International, Pipers Way, Swindon SN3 1RJ or call Colin Evans or Ray Withey on Swindon 488388 to arrange an interview.



These vacancies are open to male and female applicants.

9047

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Salary £8,114-£10,924 (currently under review). Based West London.

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Applicants should be trained

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Salary in scale £5,488 x 6 Increases

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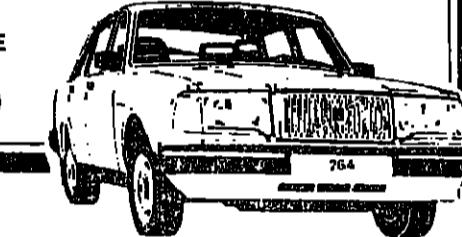
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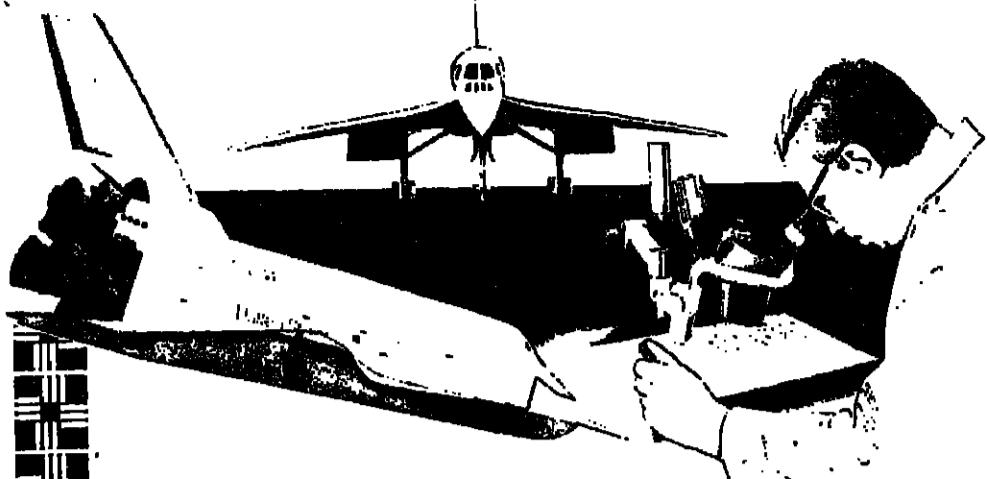
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MODCOMP

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£18k + Car London

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SYSTEMS MANAGER/PROGRAMMER

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Applicants will ideally be in their early 30s and will be expected to be able to communicate at all levels. Please apply in writing with full career details or telephone for an application form.

Dr R. C. Whelan, Operations Director
PATSCENTRE INTERNATIONAL
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(8078)

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Tel: 01-636 7584

(8089)

SAUDI ARABIA

ABWA a major facilities management contractor requires Data Processing Professionals to fill positions in RIYADH, SAUDI ARABIA. Living and working in the modern city of Riyadh offers many excellent benefits such as world travel and broadening your financial horizons. We are offering positions to highly qualified personnel to join our Multinational Project Team in Riyadh where we have installed an IBM 4341, operating under DOS/VSE with VSE/POWER, ADABAS, CICS/VSE, ATMS III PROJACS.

Preference will be given to those candidates with experience in the areas of Construction Project Management, Payroll/Personnel, General Accounting and Text Management. Arabic/English bilingual ability is a plus.

ABWA offers 12 and 18 month contracts with a highly competitive salary and benefits package that includes housing, schooling for children, Car, Medical, eight weeks vacation and yearly round trip air fare to point of origin.

POSITIONS OFFERED: SYSTEM ANALYSTS

Minimum of 4 years' experience with knowledge of COBOL and broad experience background to participate in definition and development of Applications Systems. Successful candidates will have demonstrated ability to organise and lead a team of 3 to 5 Programmers. Written communications skills and Data Base experience essential. Experience in Color Graphics or Micrographics is a plus.

PROGRAMMERS

Minimum 2 years' experience in COBOL using CICS and ADABAS or other DBMS. Experience in documentation and ability to organise personal work objectives essential.

SYSTEM PROGRAMMERS

Minimum 3 years' experience working in a medium to large scale dynamic environment providing applications and operations support. Successful candidate must have heavy experience with DOS/VSE, VSE/POWER, CICS/VSE, ACF/VTAM and ADABAS. Experience with STAIRS ATMS III PROJACS and ability to evaluate Hardware and Software helpful.

OPERATORS

Minimum of 2 years experience in a DOS/VSE, CICS/VSE operating environment supporting many On-Line users. Position requires responsible individuals willing to rotate on a 2 shift basis.

TECHNICAL TRAINING

Minimum of 3 years' experience in Data Processing Instruction from basics through Systems Analysis including COBOL and PL/I Instruction. Heavy emphasis placed on skills required to organise and structure quality training programs including preparation of instructional aids.

Assignment will consist of conducting classroom sessions in English for up to 20 Saudi Nationals, plus organising and conducting On-The-Job training exercises.

USER TRAINING

Arabic speaking personnel having 3 to 5 years of Data Processing experience in either training or a development related area. The task will consist of assimilating application systems, instruction of users and aiding Analysts in system implementation.

Qualified and serious candidates submit resumes and salary history to: BOX NO.1186 Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey, SM2 6AS.

enator

TOP SALES EXECUTIVE TO GROW WITH ENATOR

Can you communicate the business idea of one of Europe's most successful management and data processing consultancies and achieve a sale?

Enator (U.K.) Limited requires an experienced sales executive to assist in our expansion on the British market. The right person can look forward to a rewarding position, not only measured in economic terms, with a very good salary, but also in the field of personal development.

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- good experience with a proven record selling hardware and/or software.
- thorough experience of project management within the data processing area.
- the ability to listen to clients and analyse their needs.
- drive and ability to take own initiative.
- the willingness to travel all over Britain, as well as abroad as the activities expand.
- experience within one or more of Enator's main client sectors.

Enator's organisation is very different from those environments you have been used to. We place emphasis on personal development - each person has the opportunity to influence their own work and take on responsibility. As most of us work with clients in small groups, we stress the importance of personal meetings and leisure activities in order to increase personal skills and enhance the Enator spirit.

If you find this post interesting, please send your application, including CV and expected salary to:-
Enator (U.K.) Limited, Box 118, Baker Street, Weybridge, Surrey, Tel: 0932 46192.

enator

Enator (U.K.) Limited is the British subsidiary of the international Enator Group of Companies. The Group, with headquarters in Stockholm, Sweden, number altogether 160 consultancies and had a turnover of £6 million last year. The companies' products cover the whole range from management consulting through system development and implementation, via micro-processors, to staffing of data processing projects. We are a truly international company with no head office or manufacturer. Our records cover many well-known clients and we have earned a reputation for working standards - taking full responsibility for quality and time budgets. These clients cover a very broad range of activities and our companies have specialised experience in Retail and Distribution, Banking, Finance, Manufacturing and Travel and Tourism.

Other companies in the Enator Group:-
Enatorgruppen - provides the combined expertise of management and data processing consultancy.
Mikrotell - covers the wide field of micro and mini-computer systems.
Enator Syd - Enator's local company in South Sweden.
Enator Deutschland GmbH - Enator's subsidiary in Germany.

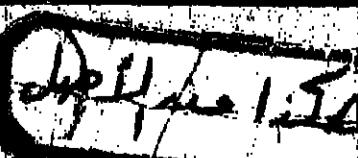
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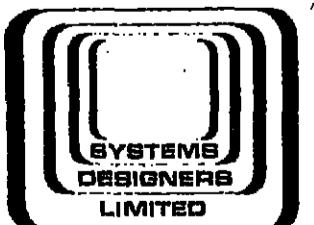


So why not attend our
Informal Interviews
 at Cafe Royal
Regent Street London
 from 12.00 noon till 9.00 p.m. on
TUESDAY 6th APRIL 1982
 Salaries to £15000 p.a. with usual benefits.

Systems Designers Limited is a leading international computer systems consultancy specialising in the application of mini and micro computers to high technology real-time systems, together with the development of pertinent languages and system development tools. We currently require Systems Engineers and Consultants with good academic background and extensive experience of mini or micro computers in technical applications. Flexibility and adaptability are prime requisites. Variety of work and excellent career prospects are the rewards and opportunities exist for work in the UK, Europe and USA.

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If you cannot attend, but the prospects interest you, please contact Margaret Brown for information on Fleet 22161 or write to her at:



Systems House, 105 Fleet Road, Fleet, Hampshire GU13 8NZ

On page 41 of the March 18, 1982, edition of Computer Weekly, RJB Manpower Services Limited carried a reference to the well-known Scrabble word game.

Scrabble is a registered trade mark belonging to J. W. Spear and Sons PLC, a fact that was not acknowledged in the original advertisement.

Chief Systems Programmer

— East Anglia
 Salary: £26k.

Ransomes, a leading manufacturer of tillage and grass cutting equipment, is now embarking on a major project involving the implementation of QMAC 29 in the manufacturing organisation.

The Company is looking for a suitably qualified programmer. The successful applicant will be responsible for all programme development, software implementation, technical support, etc. Communications systems play an increasingly important part in the Company's future, and it is essential that candidates possess relevant experience in the development of on-line systems. All systems are run on an ICL 2850, using Communications Manager, MATS, GEORGE 2+, MAXIMOP.

The salary offered with this position will be appropriate to the responsibilities involved.

We offer a sound Pension Scheme, canteen facilities and an active Sports and Social Club.

Further details and application forms available from: KEN BURKITT, Personnel Administrator, Ransomes Sims and Jefferies P.L.C., Nacton Works, Ipswich, Suffolk IP3 9QG. Telephone: Ipswich 712222 Ext. 268.

RANSOMES

DATA PROCESSING MANAGER

Salary — P.O. 11-14 — £12,705 - £13,835

It is intended to set up a new computer installation to meet the data processing requirements of the District Council. Applications are invited for the post of Data Processing Manager. The successful applicant will be responsible to a Director for establishing and managing the computer facility. He/she will have relevant practical experience, including knowledge of computer technology and management techniques.

Local Government experience and a formal data processing qualification would be an advantage.

Assistance may be given with legal fees associated with house purchase, removal expenses and resettlement allowance. Where appropriate temporary housing accommodation will be made available. Renfrew District Council welcomes applications from suitably qualified Registered Data Processors.

Application forms, which should be returned not later than Wednesday, 14th April, 1982, are available from the Personnel Services Section, Municipal Buildings, Cotton Street, Paisley PA1 1BU. Telephone 041-885 5400 Ext. 434.

Further details of the posts along with more information on the Department of Computing Services and a form of application are available from the Assistant Director (Administrative Services), Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Forms should be returned by 18 April 1982.

Forms should be returned by 18 April 19

